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IS STERILIZATION DESTINED TO BE A SOCIAL MENACE?*

G. FRANK LYDSTON, M. D.

CHICAGO, ILL.

It is hardly necessary for me to state that I am thoroughly in sympathy with the employment of sterilization in social therapeutics. I was one of the pioneers in promulgating the theory and practice of sterilization of the socially unfit, and have had no occasion to change my views as to its value.

It is a truism that any therapeutical resource which is beneficially potent is also capable of harm. This is quite as true in social therapeutics as in the ordinary kind. Social antiseptics and narcotics have in them the elements of danger.

It is the purpose of this paper not to attack sterilization, but to briefly suggest some of the possible evils of sterilization of the fit which, perhaps, may eventually affect its advantages.

STERILIZATION A POSSIBLE MENACE TO THE STATE.

Through the publication of laws providing for the sterilization of the unfit, the laity is already becoming familiar with the technic, safety and effects of sterilization upon the sexual function. The consequence is that more often than the profession at large is aware, laymen who are not of the unfit are appealing to the surgeon for the prevention of the procreation of children, with its attendent cares, expense and responsibilities. That the surgeon will one day be still oftener appealed to is inevitable. The assumption of the responsibility of procreating and rearing children demands a certain degree of self-abnegation and self-sacrifice which many of both sexes gladly avoid. The fact that sterilization in either sex does not impair sexual power is likely to appeal very strongly to the average layman.

The desire to avoid the physiologic results of the sexual act is necessarily stronger out of wedlock than within it.

Not only will sterilization appeal to the male sex, but often also to the female, perhaps in some instances more strongly, because of the fact that the burden of responsibility and care of bearing and rearing children falls most heavily on the female.

THE ECONOMIC PHASE OF STERILIZATION.

The foregoing considerations are inextricably commingled with economic conditions. The increased cost of living, which means increased obstacles to matrimony, bears particularly on the expense of rearing a family. Economic conditions, which are already bad enough from the cost-of-living standpoint, are likely to grow worse instead of better, and the proportion of marriages will necessarily decrease. Sterilization obviously may be accepted by many as the answer to some of the problems which confront society in reference to the expense incidental to rearing a family.

A very important phase of the economic problem that confronts people of marriageable age is necessarily the probability of children. Under present conditions many wage-earners are compelled to remain celibates because of the disproportion between wages and the amount necessary to maintain a family. It is possible that increasing familiarity with sterilization may increase the proportion of marriages among wage-earners.

THE MORAL ASPECT OF STERILIZATION.

While it may be an open question whether sterilization of either the fit or the unfit will increase the proportion of marriages, there can hardly be any doubt as to the demoralizing effect

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of the operation according to present ethical and moral standards of sex relations.

Under present conditions a rapidly increasing class of wage-earners is commanded by society to remain sex-neuters. This is especially true of the female wage-earner. The sex function alone of all the functions of the body is commanded by ethical considerations and moral law to remain dormant. As a matter of fact, however, it does not remain dormant. Society has not yet arrived at the stage of development which would enable it to openly face this issue. Society merely shuts its eyes and goes on mouthing legal, ethical and moral inhibitions of the biologic law.

If the practice of sterilization becomes at all general, society may be compelled to admit that inhibition of sexual immorality has depended as much upon the danger of paying the physiologic penalty, especially on the part of the female, as upon any moral or ethical influence *per se*.

STERILIZATION AS A SUBSTITUTE FOR THE ABORTIONIST.

However much the fact may be deplored; however strenuously we may legislate and preach against abortion, the practitioner of this illegal operation is, under present moral and economic conditions, to be reckoned with as a social institution—indeed, he is a social demand. Aseptic safety and the substitution of the word "curettement" for the term "criminal operation" have merely served to conceal the fire and make the custom more wide-spread among supposedly decent physicians. Sterilization may prove to be a social factor which will greatly limit the practice of abortion.

STERILIZATION AND THE CHURCH.

The church, which has always exercised a supervision over the right of the human being to procreate or not to procreate, will soon, in my opinion, have a very important problem on its hands and will have to join with the state in the endeavor to regulate the practice of sterilization.

Whatever religious views one may hold upon the subject, and whatever social theories one may entertain, it must be admitted that the individual right to determine whether or not he or she shall have children, and when, and how many shall be procreated, is at least an open question.

The large family is an ideal proposition in the abstract, but in the concrete, in the light of present economic conditions, there are those who believe that not to be born at all is better than a life of misery and degradation, and that a few children properly reared, should be the ideal of the family rather than a large number of children who can by no possibility be brought up as healthy and useful citizens. That woman should be sacrificed, as she often is, to the Rooseveltian idea of a large family has never been quite as clear to me as it seems to be to some.

RELATION OF STERILIZATION TO ILLEGITIMACY.

Should sterilization supplant the abortionist as a social factor it will be a saving factor for certain of the unborn. Society's attitude toward the abortionist and his patrons is about as inconsistent as any social folly that could be mentioned.

The woman who bears an illegitimate child becomes a social pariah. She is downtrodden by man and despised by woman. Her child is branded as a bastard before it is born, and branded deeper directly afterwards. The State practically does nothing to save its life, preserve its health and morality and develop it into a useful citizen. If such children were the arbiters of their own destinies, they never would be born.

A demand is created by society itself for the abortionist, and then society penalizes the operation and rubs its hands in hypocritic and savage glee whenever a poor starveling who is caught in the act is convicted and sent to the penitentiary as punishment for his carelessness in getting caught and a sop to the Cerberus of ethics and morality. The fact that where one abortionist is punished thousands go unscathed does not weigh in the balance. There is more joy in the penitentiary over the one sinner who is caught than there is shame in society over the myriads who escape.

INDIVIDUAL RIGHTS VERSUS STATE RIGHTS.

I will concede, for the sake of argument, the right of the individual, male or female, to be sterilized, especially in view of the fact that, in the case of the male, sterilization may be only temporary. I will also still concede that sterilization is a valuable therapeutic resource in certain diseases, and a valuable prevention of the transmission of disease and degeneracy to the unborn. I will further concede that under proper regulations and the restriction of the opera-

tion to the unfit, save where it is employed for the cure of disease, it will be of immense advantage to the State. I nevertheless, am of opinion that laws to protect society by sterilization of the criminal and other unfit classes must logically be followed by laws to protect society against sterilization of the fit, said laws being in the way of regulation of the operation.

As to where individual rights will end and State rights begin in the matter of sterilization, that is a subject which will require very careful study, wide experience and considerable time for its elucidation.

The regulation by the State of the surgeon's side of the practice of sterilization in private practice is an obvious corollary of regulation in general and will be the most direct method of attacking the evil of indiscriminate sterilization. How effective this would be is an open question. Judging by the failure of our laws for the suppression of criminal abortion, one would be justified in pessimism. The moral argument against sterilization can never be as strong as that against abortion. Sterilization is not child-murder, but is a preventive of child-murder.

The foregoing possibly will be considered by some as a prophecy by a social alarmist. I believe, however, that this paper comprehends merely the logical results that may be expected to accrue from the inevitable familiarity of the public with sterilization and its results. Possibly it may come with better grace from one who has always been a strenuous advocate of sterilization as a factor in social therapeutics, than from others who have not been quite so friendly to this particular method of social self-defence.

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THE TREATMENT OF HERNIA IN CHILDREN *

A. J. OCHSNER, M.D.
CHICAGO

ABSTRACT

The conclusions in this paper are based on the treatment of a large number of cases and a study of the literature. This study has been carried on for a period of twenty-six years and was originally begun as a result of the observation that in children which had suffered from strangulated hernia which had been reduced without operation permanent spontaneous cures resulted by simply keeping the children in bed with the foot of the bed elevated for a short time, at the same time overcoming the abnormal abdominal pressure by careful dieting and medication.

Similar results were observed in patients confined to bed following the operation of circumcision for the relief of phymosis. These observations seemed to indicate a greater tendency of hernia in children to heal spontaneously as soon as the exciting cause was removed than was generally supposed at the time these observations were begun. This led to a study of the literature.

The most important one of the older works studied was that of Malgaigne, which included all of the statistics of the French army for a number of years.

These statistics show that there is one hernia for every twenty-one children during the first year of life; that this proportion remains true up to the age of 6 years; that then there is a rapid decrease until there is but one hernia in seventy-seven children at the age of 13. During the years immediately following there is a constant and rapid increase of herniae in the male, so that at the time of recruiting the armies, which occurs at the ages of 20 and 21, there is one hernia in thirty-two males. In the female, there is no further increase until the beginning of the child-bearing period, when there is at once quite a sudden increase in the number. At the age of 28, there is one hernia for twenty-one persons; at the age of 30 to 35, one hernia for seventeen; at 35 to 40, one for nine; at 50, one for six; at 60 to 70, one for four, and at 75, one for three. From this stage on the patients suffering from hernia seem to die more rapidly than the remaining proportion of the population so that from the age of 80 to 85 there is but one hernia in fourteen persons; from 85 to 86 but one in twenty-three, and among those whose age exceeds 86, but one in fifty-six. It is plain, however, that the only time at which we can be absolutely certain that the statistics are correct is at the age between 20 and 21 in the male, because at this time all the males are actually examined by competent surgeons.

According to these statistics if no new herniae were formed between the ages of 6 and 13, 73 per cent. of all hernia in children at 6 years of age would have healed spontaneously by the age of 13. But the percentage is much greater, because many of the children at the age of 13 have

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acquired their herniae since they were 6 years of age, especially because during these years most of the herniae due to whooping cough and other coughs appear.

In our experience only about 5 per cent. of the adults coming under our care for treatment of hernia give a history of having had herniae during childhood. This corresponds almost exactly with the observations of Berger, who states from his statistics, that of 9,967 adults with hernia, only 479 gave a history of having suffered from this condition since childhood. Bull and Coley's statistics show almost identical proportions; out of 15,000 adults with hernia, only 700, or less than 5 per cent., have been ruptured since childhood. This proportion is borne out in a remarkable manner by the fact that the four hundred cases which the latter authors had selected for operation were chosen from 8,000 children suffering from hernia; which indicates that there were not more than 5 per cent. of the children examined in whom it seemed necessary to treat the condition with operation. All of these facts show that the tendency toward closure of the natural abdominal openings which should have been completed before birth continues during childhood if there is not a marked anatomical defect beyond the fact that the peritoneal projection into the canal has not been closed, and provided also that the abnormal intra-abdominal pressure has been eliminated.

Thomas Charles Martin shows that in the broadening of the pelvis the parietal peritoneum enlarges at the expense of the mesentery; the latter being thus shortened prevents the entrance of the intestines into the inguinal canal. At the same time there is a displacement of the internal ring, which still further aids in curing the hernia.

The more recent articles seem to be uniform in considering the subject from an entirely different standpoint. They base the proposed surgical treatment on the fact that herniae in children can be cured easily and safely by surgical operation; that herniae occur in individuals in which the inguinal canal was not closed normally during fetal life, that the treatment with trusses gives rise to great discomfort, and on the further theory that if not operated on in childhood, these patients will require operation for the relief of hernia later in life. This theory has, however, not been borne out by facts.

The causes of hernia in children can be classified in the following order regarding their importance: 1. Non-closure of inguinal canal. 2. Congenital separation or weakness of structures surrounding the inguinal, femoral or umbilical opening, frequently hereditary. 3. Abnormal length of mesentery and omentum. 4. Abnormal intra-abdominal pressure due to (a) faulty nutrition; (b) to constipation; (c) to phymosis; (d) to coughing; (e) to vomiting; (f) to crying and straining; (g) to traumatism and (h) to overexertion.

The following conditions make up the 5 per cent. of herniae in children which require operation. They can be recognized easily in most cases and consequently there can be no reason for operating on the remaining 95 per cent., which will heal spontaneously if the exciting cause has been removed.

STRANGULATED HERNIA IN CHILDREN

If a strangulated hernia in a child cannot be easily reduced under complete anesthesia, by taxis, the child being held in the inverted position during the manipulations, it is undoubtedly wiser to relieve the condition by an operation, because the intestinal wall in children is very delicate and easily injured by taxis. In my experience the hernial opening has always been very narrow; still I have always succeeded in replacing the hernial contents without enlarging the opening by first drawing out more intestine and then gradually replacing it, the child being placed in the inverted position.

If the hernia is an acquired one, which is not common in children, the sac is carefully dissected free to a point within the abdominal cavity. It is then ligated and removed and the ligated stump is permitted to retract into the peritoneal cavity.

If the hernia is congenital it is best to dissect up the neck of the sac for about an inch and to leave the portion surrounding the testicle to form a tunica vaginalis, while the upper portion is carefully dissected up to a point within the peritoneal cavity; it is then ligated, the superfluous portion is cut away and the stump is permitted to retract into the peritoneal cavity, as in case of acquired hernia. It is thus only necessary to close the skin and the opening will close completely in from four to six weeks if the child is kept in bed with the foot of the bed elevated. R. H. Russell gives in support of this simple operation, the fact that inguinal hernia in children occurs because of the presence of the hernial sac, which has remained after the testicle descended into the scrotum. Consequently, all that is required for the purpose of curing this hernia permanently is to completely remove the sac. His

experience as to results, which has been fully borne out by our own, seems to justify this view.

H. O. Marcy has for many years repeatedly directed attention to this condition. That equally satisfactory results can be obtained by following Bassini's or Halsted's method can easily be seen, especially from the statistics of Coley and those of Halsted and Judd. However, Funke and others have noticed severe atrophy of the testicle following herniotomies in children, in which an attempt was made to close the inguinal canal.

If it is possible to reduce a strangulated hernia in children by taxis, the irritation caused, primarily by the strangulation and secondarily by the manipulation, seems to favor closure of the hernial opening. I have repeatedly seen this occur within six weeks if the child was kept in bed in the inverted position.

The most unfavorable cases are those in which the abdominal walls are congenitally weak, a condition which seems to be hereditary in many patients. Again, of these cases, those in which there are three distinct areas of weakness—the abdomen of the three hills described by Malgaigne —seem to be least favorable of all. In this class surgical treatment usually becomes necessary, and here it is well to perform the typical Bassini or Halsted operation, or that described by Ferguson at the meeting of the American Medical Association in June, 1899; the important point in the operation being to secure an accurate closure of the inguinal canal to make up for the natural deficiency in the tissues. Two precautions should be borne in mind: 1. The stitches should be tied very loosely, in order not to cause pressure necrosis of the already weakened tissues. 2. The tissues of the cord in the male should be manipulated very carefully for fear of causing an atrophy of or preventing the full development of the testicle. This is especially important in this class of cases, because herniae in congenitally defective patients are very likely to be double, and if both testicles should atrophy, the patient would be permanently injured. In this class very frequently no truss will retain the hernia.

REDUCIBLE HYDROCELE

It is no uncommon to find a hernial sac opposite the internal inguinal ring and the portion beyond distended with fluid in the inguinal canal, preventing the closure of the latter opening. It is, of course, impossible for the patient to wear a truss with comfort and unless the fluid is removed this cannot heal. Simply making a small incision over the inguinal canal, ligating the upper end of the sac opposite the internal ring, cutting away beyond this ligature and closing the wound in the skin has in my experience invariably and permanently cured these cases. In a number of these I have obtained the same result by tapping the sac and injecting 5 drops of 95 per cent. carbolic acid, but the other operation seems preferable. In some instances it is not possible to excise this sac because it cannot be separated from the cord. In these cases it will suffice to split it longitudinally and evert the edges around the cord, suturing them in place with fine catgut. This places the serous surface of the sac in apposition with a raw wound surface which will prevent reaccumulation of fluid.

There is but one other condition which justifies the operative treatment of hernia in children, and that is when on account of adhesions, the hernia, although not strangulated, is still irreducible. In this class of herniae a truss cannot be worn with benefit, because of the empty canal. Moreover, the opening not being empty, its closure is necessarily impossible unless the adhesions are absorbed, which, if occurring at all, necessarily require a long space of time. In this variety of hernia, unless it be complicated with the form just described, it is not necessary to do anything further than the operation indicated in case of strangulated hernia. The hernial sac being removed, the opening will again close spontaneously.

In the operation for the relief of femoral hernia in children, it is never necessary to do anything beyond dissecting out, ligating and cutting away the sac, permitting the stump to retract into the peritoneal cavity and closing the skin. These cases are exceedingly rare. I have never seen a strangulated femoral hernia in a child and only once an irreducible one due to an adherent omentum, which necessitated an operation.

USE OF TRUSSES

Too much stress has been laid on the importance of trusses in the treatment and too little on removing the causes of hernia in children.

It is far easier to retain a hernia and thus encourage the closure of the hernial opening by first relieving the abnormal intra-abdominal pressure and then applying the truss simply as an aid, than it would be to accomplish the same object by the use of the truss alone.

If it is at all possible it is always best to place the child in bed in the inverted position and to reduce the intra-abdominal pressure by the methods which have been described above, before making use of a truss at all. Then, if it is not

possible to maintain this position sufficiently long to obtain a cure, it is well to apply a perfectly fitting truss which should make only just enough pressure to retain the hernia.

The fact of using a truss does not make the other precautions unnecessary. The child should still be cared for so as to remove abnormal intra-abdominal pressure from every cause, and the foot of its bed should still be elevated in order to make use of gravity in keeping the hernia empty and to facilitate the shortening of the mesentery.

My observations and a study of the available literature on this subject have led me to accept the following conclusions:

CONCLUSIONS

1. The development of herniae in children is favored by (a) faulty development of the abdominal wall; (b) insufficient strength in the tissues involved in closing the umbilical, inguinal or femoral openings; (c) abnormal intra-abdominal pressure; (d) unclosed condition of the tunica vaginalis.

2. The causes (a) and (b) are frequently inherited.

3. The abnormal intra-abdominal pressure is due (a) to gaseous distention resulting from improper feeding; (b) to the exertion necessary to evacuate the bladder on account of obstruction due to phimosis; (c) to severe pressure necessary in defecation in case of constipation; (d) to severe, long-continued coughs; (e) to vomiting; (f) rarely to traumatism or over-exertion.

4. Approximately 95 per cent. of all cases of hernia in children will heal spontaneously if the abnormal intra-abdominal pressure is relieved and the hernial sac is kept empty.

5. This can be accomplished by means of trusses or much more rapidly in inguinal and femoral hernia, by placing the child in bed with the foot of the bed elevated; the time required usually does not exceed six weeks and in most cases the hernia will heal on relieving the abnormal intra-abdominal pressure and simply placing the child in bed with the foot of the bed elevated each night from 6 p. m. to 8 a. m. the following morning for several months.

6. Children with a tendency to the formation of hernia should be guarded against developing coughs.

7. Their diet should be given at regular times and chosen with a view to avoiding gaseous distention.

8. Constipation should be entirely prevented.

9. In case of boys, phimosis should be relieved if present by operation.

10. Badly nourished and badly cared for children of the poor should be treated in hospitals, being placed in bed in the Trendelenburg position, the cause of increased intra-abdominal pressure being removed at the same time by proper diet and treatment.

11. Operation is indicated (a) in strangulated hernia; (b) in irreducible hernia due to adhesions; (c) in case the opening is unusually large in a free hernia, especially if the condition is hereditary; (d) in reducible hydrocele; (e) in cases with undescended testicle unless they show a tendency toward spontaneous cure.

12. Except in Class C, the operation should consist simply in carefully dissecting out the sac or in certain cases of inguinal hernia the neck of the sac, ligating it within the abdominal cavity, cutting away the sac and permitting the stump to retract within the abdominal cavity and closing the skin wound.

13. In Class C the Ferguson-Andrews operation is indicated.

14. In Class E the Bevan-Ferguson-Andrews operation is indicated.

15. The recumbent position, with the foot of the bed elevated, is of very great importance in the after-treatment of operative cases as well as in the non-operative treatment of hernia in children.

16. In young children who will not remain in bed with the foot of the bed elevated, this position can usually be maintained by applying rubber adhesive straps to both lower extremities and having these held in a vertical position by means of weights and pulleys.

17. If the child cannot be kept in this position, a well-fitting truss should worn night and day until there has been no protrusion for at least six months; at the same time the necessary precautions must be constantly taken to guard against abnormal intra-abdominal pressure from any cause.

THE PHYSICIAN AND THE DEFECTIVE*

C. B. CALDWELL, M.D.
LINCOLN, ILL.

According to recent estimates, approximately twenty thousand persons of defective mentality are now living in Illinois. Some observers would go even higher, so that instead of allowing one

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in every 280 persons to be feeble-minded they would have it one in every 250, making the total greater by 2,500. Twenty thousand is a number sufficiently large that one can hardly realize what economic questions to the state are involved.

In the past decade, or rather during the last five years, much has been said and written about what must ultimately be done with these people, so much in fact, that it has almost reached the stage of being a vogue. We have had with us from time immemorial the insane and feeble-minded, but people generally, until recent years, have chosen more cheering fields for their efforts at reform than thinking about these subjects.

Illinois has one state institution for defectives —the Lincoln State School and Colony, formerly known as the Illinois Asylum for Feeble-Minded Children, at Lincoln—the object of which as stated in the creating act was "to promote the intellectual, moral and physical culture of the class of persons indicated in the title, and to fit them, as far as possible, for earning their own livelihood and for future usefulness in society." This institution, which is now crowded to its capacity with an enrollment of 1,600, has far more children than can be dealt with properly. Comparatively few are being cared for in private institutions. What of the remaining 18,500 or more children of this type in the state? What can be done for them? How best may they be handled? Allow conditions to go on as before? Create other state institutions, or regulate and make more stringent the marriage laws—desexualize those who are examples of this type, pass laws to compel the larger municipalities to create institutions for the care of their own defectives? All these suggestions have been offered in partial solution of the problem. By physicians? Yes, some physicians, but for the most part by political economists, psychologists, eugenists, settlement workers and sociologists in general, all of whom have joined in placing before the public an educational propaganda whereby thinking people will pause and give heed to the needs of the situation.

Among those who are actively engaged in this work the question of handling the defectives now here is but dimly secondary to that of prophylaxis against their future multiplication. To one who comes frequently in contact with the parents of such offspring there can be no doubt as to the strong part ancestry plays. This knowledge, then, involves the several theories of solution enumerated.

With the utmost respect for the labors of those others who are busily engaged in trying to clear the situation, after all is it not the physician who should point the way? Those defectives now in institutions are under medical supervision, the policy for their handling being under medical men; the specialist in nervous and mental diseases is often consulted for the final word as to the disposition of such a child; but the general practitioner of medicine is the one to whom I appeal. He is the pivotal force by whose use more can be accomplished, I believe, than by any other single agency. His position is such a one of trust and confidence with his clientele that his influence and advice would be most potent factors in the education of the general public on matters concerning the disposition of such defectives as are now with us, as well as creating a general sentiment that could be crystallized in the instructing of legislators to enact such laws, for instance, to govern marriage—with especial reference to the fitness of the contracting parties for taking that step, to regulate the sterilization of those not properly qualified to procreate, providing for new institutions necessary to care for this class, etc., as the exigencies of the occasion seem to demand.

The physicians should be the leaders in their respective communities on matters of this kind, but to develop an able and intelligent method it is of importance that they must devote enough time to qualify for such leadership. The questions of what to do with our defective, and what to do to prevent their increase, are sufficiently broad to warrant a more widespread attention, as their solution is as yet by no means assured. It would then seem that the first need would be for the general practitioner to show a greater interest.

There has undoubtedly been heretofore a disposition among the members of the profession to hand on such cases as reach them, and to do so at the earliest possible convenience, thereby sidestepping more than a nominal amount of responsibility. As the great majority of cases admitted to institutions for the feeble-minded and defective are so placed only with the final consent of their relatives or next friends, the tendency on the part of the doctor to hold out an alluring picture for the decided benefits likely to accrue in each case, as an inducement for the step to be taken, is unfair to all parties concerned. Not only does this practice make toward overcrowding institutions so much that their work is reduced in effectiveness, but it allows the relatives and friends of such a child to build false hopes for

an eventual "cure" and restoration to normal state. To make a most liberal estimate not more than one in a thousand of really defective children is susceptible to such treatment as would result in a "cure." It would be easy for the physician to acquaint himself with the facts so that while not presenting too discouraging a prognosis his optimism could be curbed by confining the outlook to the degree of improvement instead of the possibility of cure. And, in fact, many cases of feeble-mindedness do not improve at all, but do the opposite, losing ground mentally with a resulting dementia, as any one with much experience can testify. Such children may well be likened to that fruit of the tree which drops early and without going on to a healthy maturity. They are shriveled in mind and often in body so that in the very nature of the case too much may not be expected in the way of future development. A brief time devoted to a study of mental defectives as outlined in one of the short and inexpensive texts of the day will quite likely change the aspect of one's understanding and emphasize what it means to posterity to deal intelligently with this situation at the present time.

There are some physical conditions which exist very often among the defective that are susceptible to correction. I refer to abnormalities as enlarged tonsils, adenoid vegetations, nasal polypi or other respiratory obstructions; eye, ear or other special sense defects that can be rectified; bone curvatures, joint contractures and deformities generally that follow cerebral palsies or accompany other forms of paralysis, and injuries, which may be decidedly benefited by the application of the principles of modern orthopedic surgery if taken early. It is important that these conditions, when they exist, be looked after early in the child's life so that the resulting benefit from correction will subtract just that much more from the child's mental retardation. The removal of post-nasal adenoid growths, of enlarged and diseased tonsils or other obstructions to the free passage of inspired air has been so often followed by a mental brightening that these operations are of proved aid. The early examination of the eyes and ears for correctible shortcomings of vision and hearing should be practiced as lack of one or both of these senses may result to a greater or less degree in the state formerly known as "idocy by deprivation," a mental condition certainly amenable to special educational methods.

Associated with the points above related is the importance of detecting early in life mental defect, and if present, the degree thereof. Late eruption of the first teeth, slowness in talking, delayed ability to use the muscles, especially in walking, presence of a vacant, expressionless facies, and in some cases signs of paralysis, hydrocephaly, microcephaly or other organic lesion serve to indicate roughly that there is faulty brain development and should put the physician on his guard against the making of a too favorable prediction for ultimate development.

By an ingenious system of tests two Frenchmen, Binet and Simon, have given to the world what is known as the Binet scale for measuring intelligence. Working with thousands of average children of various ages these two men devised a series of tests, arranged from below upward in order of difficulty of performance, so that a stated number of the series would represent what a child of normal mentality should successfully pass at the age given. For example, a child of 2 years should be able to:

1. Eye follows light.
2. Block is grasped and handled when placed in its hand.
3. Suspended spool is grasped when seen.
4. Candy is chosen instead of block.
5. Paper is removed from candy before eating, child having seen the wrapping.
6. Child obeys simple commands and imitates simple movements.

Continuing, for a mentality of three years the child:

1. Touches nose, eyes, mouth and pictures of these as directed.
2. Repeats easy sentences of six syllables with no error.
3. Repeats two numerals.
4. Enumerates familiar objects in pictures.
5. Gives family name.

This scale has been elaborated up through the fifteenth year of intelligence, and while it is constantly being revised it seems to be at this time the best means for determining the presence of mental retardation, as well as the amount or degree of such retardation. For instance, a child 7 years of age may pass only through the tests for three years. He is then graded as having an intelligence age of three years with a mental retardation of four years, and so on. A child who does not pass above a two-year intelligence age is called, by this classification, an *idiot*, over two years and below the eight-year level an *imbecile*, and including the eight-year intelli-

gence age and upward he is a *moron*. The three groups of idiots, imbeciles and morons are in turn divided into low grade, medium grade and high grade subdivisions, making in all nine units of intelligence classification. A type is recognized as "backward," an extra stage between the moron and the normal individual. While arbitrary lines are drawn between these intelligence groups the Binet scale offers something definite and tangible, so either a child is found to be normal, below normal or precocious in intelligence.

It is not expected that the ordinary physician, without psychologic training, after having used these tests on a child would be able to make deductions of a technical nature, but he could easily determine gross retardation beyond a question of doubt, for the tests in themselves are easy to give and the apparatus to carry them out can be procured without much difficulty. As a general rule, the child lends himself nicely in an endeavor to perform the tests to the best of his ability, so one may not often be called on to modify the result on account of the child's indifference. The use of these tests by a practitioner when opportunity brings a doubtful case his way will prove another method of showing that he is abreast of the times.

Having decided that a child is defective mentally it may develop for various reasons that it is impracticable to send him to a special retreat for care and education. In any city upward of 2,000 population it will be found that there are several children in the lower grades of the public schools who have failed to pass along, staying for two, three or four years in a single grade, thus acting as a drawback to the progress of those who are brighter and interfering materially with the general welfare of that grade's efficiency. For the good of the majority, this condition should not exist. There may be some physical reason directly responsible for the lack of progress in a given child, or he may be simply defective mentally. At any rate the school physician—there really should be a school physician in every community—should examine these children for physical defect and also aid the teacher in determining the amount of mental retardation if such were present. Children of this type need to be segregated into special rooms where instruction of proper character can be given, and where they may be allowed more time to each task assigned, it naturally following that they be made free from the discouraging feature of witnessing themselves so poor in comparison as has been the case in their former class-rooms. This practice is already being done in the larger cities, but it should be general. There is no reason why the physicians of a community should not lead in this movement or at least lend an intelligent cooperation in a work where medical questions are so closely interwoven with educational matters of direct public interest.

Another factor of great importance in a medicolegal way is the constant appearance in the courts of this class of offenders. Crimes are committed ranging in degree from the most petty to the most grave of offenses against society. Only recently an account of a most revolting and degenerate act of homicide occurred in our own state—an act which should set every physician to thinking of the necessity of giving this class more sober thought.

The physician is a public institution in himself. In every community of our commonwealth he is present, working directly among the people, watching over their daily ills, in charge of the obstetrical cases; indeed, ushering into the world the little babes on whom the future of our state and country depends. Through colic and through teething, through the ordinary diseases of childhood and the unusual, in fact, through all the tumultuous journey of childhood does the doctor—the "family" doctor—pilot the lives of our future citizens. Is it at all wonderful that parents, as well as the children themselves, repose an enormous amount of confidence in *their* doctor? Confidence that passes far beyond mere physical ailments, causing them to seek a sympathetic and even fatherly direction as to their course in mode of life, in matrimonial affairs, in their very relations with mankind. Confidence that gives many a trust far afield from the strict realm of medical practice. What a wonderful opportunity to do good lies with the "family" doctor! And it is an opportunity too, that has been freely utilized in many an added sacrifice on the part of the physician.

What is asked is to place another load on your shoulders, knowing full well how many are now being carried, an additional burden which means much to humanity in its outlook on the future. The study and solution of this knotty problem carries with it so many angles that are interwoven with the practice of medicine, so many variegated features that require knowledge of a practical as well as technical nature that the physicians of the state and country may do no greater service than to take the foreground in the work that lies in this field.

DISCUSSION

Dr. Frank P. Norbury, Springfield: I asked Dr. Caldwell to come here to contribute this paper to the society. I wish it could have been read at the first day's session, because it is a part of a propaganda which we are agitating in the state on the education of the physician with reference to mental and nervous disorders, especially the problem of the feeble-minded. This problem does not concern Illinois alone; it is a problem of civilization; a problem which in the past year has been brought before the British Parliament with a view of determining from a legal standpoint the status of the feeble-minded. The bill introduced in the British Parliament is known as the "Mental Deficiency Bill," but unfortunately, through the agitation over women's rights and other discussions of that kind, Parliament adjourned before the bill was brought up for second reading. The bill will be re-introduced, and again discussed with a view of determining the legal definition of what constitutes feeble-mindedness. This is one of the problems that confronts us to-day; a problem that will be brought up in the prosecution of the case the doctor has mentioned. I brought this matter to the attention of several members of the legislature at this session, and have succeeded in getting the agitation started which will ultimately lead to some legal methods of the definition of feeble-mindedness, also the question of the parole of the feeble-minded. Further, the question of an institution for the segregation of the feeble-minded women and all features of a social nature which concern the feeble-minded. We feel that the medical profession as a whole and the people in general do not comprehend the extremity of this great condition that exists in every community; it is up to us to be the leaders in outlining some program. The matter in Illinois is getting pretty fairly under way; in the month of June there will be a meeting in Chicago of alienists and neurologists, it being the second one we have held, which makes direct appeal to the medical profession to get them in touch with this movement. I hope Dr. Caldwell will present this paper at that meeting, as I am axious it should come before the medical profession and the people. The more knowledge of this kind we have, the better for us and for society at large. The Illinois State Medical Society should foster this propaganda of education.

THE DRY TREATMENT OF LEUCORRHEA AND CERVICAL EROSIONS*

JOHN A. KOCH, M. D.
QUINCY, ILL.

The dry treatment for leucorrhea has not been given the attention that it should have received. Leucorrhea is the main and persistent symptom of endometritis, endocervicitis, cervicitis and vaginitis; the underlying causes may be gonorrhea, tuberculosis and carcinoma. In most cases the leucorrheal discharge results from a vaginitis which is secondary to an endometritis, the irritating uterine discharge setting up an inflammation in the vagina. Constitutional anomalies such as chlorosis, tuberculosis, constipation, etc., are also causes of leucorrhea, more than is generally observed. It is unnecessary to say that in treating a leucorrhea one should endeavor to find the cause. If the cause is found, the treatment of the leucorrhea in each case is still necessary. Frequently removal of the cause cures the leucorrhea, but very often we have to be satisfied with the symptomatic treatment. The treatment of leucorrhea has been much neglected in modern therapeutics. So long as we looked upon the endometrium as the sole origin of leucorrhea, our treatment was made directly to the endometrium. It occurred then that we could not do enough cauterizing and irrigating of the uterus. That this treatment was mostly mal-treatment, is becoming gradually known.

The danger in treating locally the uterine cavity is the possibility of further infection of the endometrium, infection of the Fallopian tubes and production of a pelvic cellulitis. Many ascending infections are directly produced by vaginal douches; we would not advise douches during menstruation, or in acute gonorrhea, but in a germ-laden leucorrheal discharge we have considered douches harmless.

Let us consider a case of leucorrhea. Upon separating the labia we observe a white, thick creamy discharge flowing out of the vagina. Insertion of a speculum shows the cervical canal closed with a glary viscid plug of mucus; an endocervicitis is observed. The patient will usually give a history that in spite of disinfecting and astringent douches she has not been able to eradicate the discharge. Suppose we irrigate with a quart of fluid in a case like this, what will we usually notice if a speculum is immediately inserted? In the posterior vaginal vault one will see distinctly portions of the above mentioned discharge. The lower two-thirds of the vagina will be found clean. The effect of the irrigation, to be honest, has been to carry germs to the upper portion of the vaginal canal and to loosen and soften the vaginal epithelium and thereby making reinfection possible.

In general surgery moist treatment of wounds has been displaced by dry treatment. Otitis with perforation, otologist now treat with boric acid insufflations, instead of irrigations. So with

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leucorrhea, we must displace douchings with insufflations and the direct applications of powders and produce dryness.

The late gynecologist, Fritsch of Bonn, was the first to suggest the dry treatment of leucorrhea. It was strongly advocated in 1909 by Nassauer of Munich, and in 1910 I saw Liepmann of Berlin use powder treatment and strongly recommend its use. Nassauer used kaolin, but Liepmann made an improvement on this by using a slightly soluble aluminum acetate with kaolin and powdered talcum, the proportions as follows:

Aluminum acetate, one part.

Kaolin, two parts.

Powdered talcum, two parts.

The effect of the powder is to produce absorption of moisture and to act as an astringent. It absorbs pus, mucus and the bacterial flora and makes the latter harmless. The use of the powder treatment also produces a feeling of cleanliness, while the use of glycerin, boro-glycerin and ointments increases the discharge. Erosions of the cervix can be cured with this powder alone without the use of any cauterization. In gonorrheal vaginitis, this compound aluminum acetate powder has a splendid effect. I have used this powder almost three years in my practice and the splendid results I have obtained has induced me to acquaint others with it. Most astouding results have been secured. Women with profuse vaginal discharges, accompanied by foul odors, have returned the next day for further treatment with the statement that the application not only caused a complete disappearance of the discharge, but caused a general well-being: a relief from backache, headache, bearing-down feeling, etc.

The method I use is as follows: A milk-glass speculum of proper size is inserted. The vagina is sponged dry and at least a heaping teaspoonful of the powder is poured into the speculum. With a sponge of gauze the powder is pressed against the cervix and while the speculum is gradually withdrawn the vagina is thoroughly powdered. At the next treatment the moist masses are removed before powder is again applied.

My plan of treatment is usually to give a second treatment the following day, then the 4th, 6th, 8th, 10th, 14th and 18th day. In this way I have given relief to nine out of ten cases.

It is sometimes impossible to get the patients to come to the office for treatment, often they will refuse to be treated locally and will only accept treatment that they can administer to themselves. To bring relief to this class of patients Nassauer originated an insufflator. A pear-shaped bulb of glass, with an opening through the long axis of the bulb, is inserted in the vagina. At the upper side of the bulb is a reservoir for the powder which falls down in the opening through the bulb. Pressure on a rubber bulb distends the vagina and at the same time distributes the powder everywhere. This treatment may be given twice a day and twice a week the masses are removed by the physician, but where this is not permitted a douche will have to be used. In the treatment of vaginitis of children the powder has proven a blessing. It is applied painlessly with a glass tube of proper size and plunger. The tube is filled one-third and while the plunger is pressed home the tube is gradually withdrawn. A subsidence of the discharge is noted at once.

In conclusion I wish to say that the use of the dry treatment in a few cases of leucorrhea will convince you of its superiority over any moist applications.

SOME OBSERVATIONS ON VACCINE AND SERUM THERAPY FROM DR. MURPHY'S CLINIC*

PHILIP H. KREUSCHER, M. D.
of Dr. Murphy's Staff.

As early as 1880 scientists demonstrated by experiments that bacteria injected into the blood-stream of healthy animals were destroyed by some then unknown specific action of the blood of the animal. In 1885 Fodor injected large quantities of pathogenic bacteria into the blood of the animals, and found that the blood was sterile in forty-eight to seventy-two hours. In 1887 he demonstrated that the blood of guinea pigs was destructive to living bacteria. It was concluded that this was due to some specific toxin which was supposed to be present in the blood of healthy animals. Metchnikoff and his co-workers after years of research advanced the theory that certain leukocytes (phagocytes) had the intrinsic action of taking up, destroying or digesting living pathogenic organisms. This they are enabled to do by the opsonins which in some way combine with the bacteria and prepare them for destruc-

*Read before South Side Branch, Chicago Medical Society, May 27, 1913.

tion by the phagocytes. Dr. A. E. Wright demonstrated that fact, and first used the term "opsonins." He also discovered that these opsonins may be increased by injecting bacterins or bacterial vaccines, and thus an entirely new method of treating infectious diseases was introduced to the scientific world.

Bacterial vaccines are designed to antagonize bacterial infections. This may be accomplished in a prophylactic manner, as illustrated by the antityphoid inoculation, or therapeutically, as by the use of pyocyaneus vaccine in a case of pyocyaneous infection. Every healthy animal organism antagonizes pathogenic bacteria, but when the animal of itself does not possess the sufficient antitoxic power, it becomes necessary to increase the so-called phagocytosis by artificial means. The factor which produces this active resistance against the destructive hosts is known as immunity. When the animal organism, by its own power, successfully destroys the infection, we have spontaneous recovery. Under ordinary circumstances every living animal is constantly exposed to possible sources of infection. Bacteria are present in the air we breathe, in our food and drink, as well as on our skin and in our alimentary canals. It is obvious, therefore, that there is some potent natural means of resisting the attack of the organisms, and that it is only when these means fail or are insufficient that infection takes place. This resisting power against the invasions of microorganisms is termed immunity—the exact opposite of susceptibility. Furthermore, the process of natural cure of any infectious disease is made possible by such a degree of immunity as may suffice to destroy the invader.

There are two varieties of immunity—the natural and the acquired. Natural immunity is that which is inherent in the constitution of the animal when born, and not due to any event taking place in its life history. Thus the lower animal is immune to gonorrhea, and the human is immune to the germ of chicken cholera.

The causes which lower the resistance or immunity are of two kinds—general and local. Of the general causes, exposure, starvation, and malnutrition are the most important. Local causes, including injuries, contusions, or irritations due to chemic substances, lower the natural resistance.

Acquired immunity is of two kinds—active and passive. Active immunity results from a previous attack of a disease contracted naturally or due to artificial inoculation. Syphilis and the exanthemata are good illustrations of diseases conferring an active immunity, although even these are not always absolute.

Passive immunity is that which is conferred on an animal without effort on its part, namely, by the injection of serum from an animal which has already acquired an active immunity against the disease in question. If some of the serum from a horse which has been actively immunized against tetanus is injected into another animal, the latter will also become immune to the tetanus bacillus or to its toxin. Passive immunity cannot be bestowed by the injection of serum from an animal which is naturally immune. When the animal is immune, it contains in its make-up protective substances commonly known as antibodies, which are present in the blood or in the tissue secretions. Among them we may include antitoxins which act by neutralizing the bacterial poisons, and bacteriolysins which destroy the bacteria, and opsonins which in some way prepare the bacteria for destruction by the phagocytes. In contrast to these are the antigens, which are substances that stimulate the production of antibodies. Bacterial vaccines, living or dead, are antigens. The fusion of the diphtheria bacillus used to stimulate the production of diphtheria antitoxins is likewise an antigen. Wright and Douglas employed the term opsonins to designate the elements in the blood-serum which prepare the bacteria for destruction by the phagocytes. By counting the bacteria contained in a certain number of leukocytes and dividing to obtain an average, the so-called phagocytic index was obtained. The phagocytic index of the patient, divided by the average phagocytic index of a given number of normal persons, gives the opsonic index. The determination of this index requires time, skill, and a well-equipped laboratory, and is not considered indispensable to success in this new department of therapeutics.

Wright was first to determine the phases of reaction by means of the opsonic index. A short time (twelve to twenty-four hours) after the inoculation is made the opsonic index falls lower than it was previous to the injection. This he designated the negative phase. After an interval of two or three days the opsonic index rises above

the starting point. This he called the positive phase. After this there comes a point of sustained high tide of immunity. Thus the injections are repeated from time to time, and the positive phase gradually attains a higher level, until it may be as high or higher than that of a normal individual. In other words, if the vaccinations are properly given (never during the negative phase), the patient's tissues are stimulated to an increased production of the opsonins, phagocytosis is increased, the invading bacteria are disposed of, the patient recovers from the infection.

Theoretically, the opsonic index is a valuable guide in determining the size and frequency of the dose of the vaccine, but the process of estimating the index is so intricate, so tedious, and so liable to error in the hands of the average clinican that it is not practicable in our everyday work. It is our conviction, however, that in certain obstinate cases, in which the therapeutic vaccine injections have wholly or partially failed, the study of the opsonins may furnish a most valuable clue to the cause of the failure. In practice the clinical symptoms, such as rise in temperature, increased pulse rate, the amount of local pain, and the inflammatory reactions to the localized infection, and the patient's general condition may be relied upon in determining the size and interval of the dosage.

Our general rule has been to begin with the small dose and progressively increase, immunity being more effectually produced by the repeated injections of gradually increasing doses than by a single injection of a large dose. Should no improvement be noted, the size of the dose may be increased or the interval shortened, or both. If a pronounced clinical reaction occurs, characterized by general malaise and an aggravation of symptoms, it indicates that the dose has been too large. In all our joint cases which receive the combined treatment of vaccine injections and the formalin and glycerin injections into the joint, we have made it a rule never to inject a vaccine on the day preceding or during the three or four days following the joint injections. As a general rule, the intervals between the doses in the more acute or subacute infections vary from three to four days. After the acute symptoms have subsided, the interval may vary from four to five days. In other words, as stated above, never inject during the negative phase when the opsonic index is low, but wait for the reappearance of the high tide of the positive phase.

It is obviously impossible to discuss more fully the various complex steps of the subject of immunity. The physician who wishes to familiarize himself with work along this line may find exhaustive reference in the German work of Wolff-Eisner, or Ricketts' "Infection, Immunity, and Serum-therapy." The work of Citron has recently been translated into the English language, and is very concise and practical.

Definition and Method of Preparation. Bacterial vaccines are suspensions of definite quantities of dead pathogenic bacteria in physiologic salt solution.

Unless the best kind of culture-medium is used, the vaccine will be worthless when the subsequent steps are performed. Bacteria are so sensitive to their environment that it is very easy to attenuate a virulent strain by two or three transfers on unsuitable media. Usually the medium which gives the most prolific growth in the shortest time is the one which attenuates the culture least.

About 95 per cent. of all cultures for vaccines are grown on plain agar, blood-agar, or hydrocele fluid. Plain agar must be made from meat infusion (not from the commercial extracts), from which the muscle-sugar has been removed by inoculation with the bacillus coli. To this there are added 15 gm. of agar-agar, 10 gm. of Witte's peptone, 5 gm. of sodium chlorid, 1 gm. glucose for each 1,000 cc. of the finished product. This is titrated and adjusted so that it takes 1½ cc. of 0.1 per cent, normal NaOh to neutralize 10 cc. of the agar. This is tubed in 10 cc. test tubes with 10 cc. for plating, and part put with 5 cc. for slants and then sterilized in an autoclave.

Blood-agar is prepared by adding 1 cc. of sterile human blood to 5 or 10 cc. of agar which has been melted and then cooled to 50° C.

Hydrocele fluid agar is made by adding 1 part of the fluid to 2 parts of 2 per cent agar in the same way.

We use the glucose agar when we expect to find staphylococcus pyogenes aureus, albus, or citreus, B. coli, B. typhosus, B. proteus, or B. pyocyaneus; blood-agar when trying for the streptococcus, meningococcus, gonococcus, micrococcus catarrhalis, micrococcus tetragenus, micrococcus para-

tetragenus, pneumococcus, bacillus influenza, or Friedlander's bacillus. Since the first group of organisms will also grow well on blood-agar, it is obvious that whenever we are in doubt we always use this medium.

When glucose agar is used, the bacteria are isolated by making several dilutions and plating.

When blood agar is used, the plates must be made at the time the blood is drawn, and subsequently inoculated by streaking the infected material over the surface by means of a bent glass rod or platinum wire. By both these methods isolated colonies are obtained, and pure cultures can be made by "fishing" out the different ones and making subcultures on the differential media necessary.

Pure cultures are essential because:

1. The organisms must be identified in order to determine if they are pathogenic and also to know what temperature must be used to kill them.

2. Different kinds of bacteria have different rates of growth on the same medium, and some organisms grow well together, while others do not, so in mixed cultures we do not obtain the organisms in the proper proportions.

3. Almost all cultures from surface lesions are contaminated with saprophytic bacteria, which usually outgrow the pathogenic ones, and are, of course, useless for making a vaccine.

After pure cultures of the pathogenic organism or organisms are secured it is easy to prepare the vaccine. Only two precautions must be taken: 1. The pure cultures should not be contaminated during the process, and 2, the proper dosage must be obtained.

Method. Several agar or blood-agar slants are inoculated with pure cultures of the organism from which the vaccine is to be made. The bacteria are spread over the entire surface and allowed to grow in the incubator. Twenty-four hours is usually sufficient. Salt solution (0.9 per cent NaCl and 0.2 per cent trikresol) is added to each tube, and the bacteria are washed down by rubbing the colonies free from the surface with a platinum wire. The heavy emulsion is then poured or pipeted into sterile bottle containing glass pearls and thoroughly shaken, either by hand or, better, in a shaking machine. In this way the clumps are broken up and a uniform emulsion obtained. The mixture is then poured into sterile centrifuge tubes and whirled for a few minutes to remove any particles of culture-medium which may be present. The supernatant emulsion is pipeted into a sterile tube, and is now ready to be standardized.

Standardization of a vaccine means the determination of the number of bacteria in 1 cc. of the mixture. There are several methods for doing this. Wright's is usually the most convenient. When using his technic, we compare the number of bacteria in the suspension with the number of red blood-corpuscles in human blood. We select some one whom we know to have about 5,000,000 cells in 1 cmm. A capillary pipet with a mark about one inch from the tip and several clean slides are the only apparatus necessary. One or two volumes (one volume equals amount of fluid contained in the capillary tube between the mark and the tip), of potassium citrate are drawn up first, then exactly one volume of human blood, and, finally, one volume of the bacterial emulsion. The fluids are immediately expelled on a glass slide, then drawn up and expelled again. This is repeated several times to secure a uniform mixture. Small drops are placed on each of three or four slides, and ordinary blood-smears made. These are stained with methylene-blue or Wright's blood-stain. When examined, we see that the slide has numbers of bacteria distributed around the blood-cells.

A total count is then made of 10 oil-immersion fields of both the red blood-cells and the bacteria. From this count we can determine the number of bacteria per cubic centimeter of the suspension. For instance, if there are 300 bacteria and 500 red blood-cells in the fields counted, we say 300 : 50 :: x (the number of bacteria per cubic centimeter) : 5,000,000. Therefore, x equals 3,000,000, the number of bacteria per cubic centimeter.

Since we have determined the concentration of the mixture, it is easy to dilute it so that we have 100,000,000, 2,000,000, or 500,000,000, in each cubic centimeter. For dilution we use the salt solution which contains 0.2 per cent trikresol, so that we have the same concentration of the preservative in all dilutions of the finished product. The vaccine is now put up in 1 cc. ampules, several for each dilution, and sealed.

These ampules are now sterilized by heating in a water-bath, usually at 58° to 60° C for forty-five minutes.

These are tested for sterility by making cul-

tures on appropriate media and by animal inoculation. If negative results are obtained, the vaccines are ready for use. They are labeled and kept in the ice box until injected.

Vaccine Versus Sera. In the treatment of infections it is necessary to decide whether the therepeutic sera or the bacterial vaccines are indicated. Vaccines, as stated above, are bacterial suspensions which, when injected, stimulate the organism to the formation of antibodies. Sera are fluids containing antibodies already formed, and are injected into the circulation to supply antibacterial elements without stimulating the body-cells to the production of these substances. Hence in the use of sera the antibodies formed in the body-cells of the horse are supplied to the patient, and a condition of passive immunity is established, lasting a few days or a few months.

There has been so much written on biologic therapy that it seems almost unnecessary to discuss the indications and contraindications for vaccines and sera. There is, however, some doubt in the minds of the average practitioners, and even some difference of opinion among the clinicians who use vaccines, just when the vaccines or sera are indicated.

Theoretically, sera should be given only in the toxemias, such as diphtheria or tetanus, but clinical experience has taught us to use sera in the acute general infections where the condition of the patient is such that the blood should be supplied with antibodies already formed, as in serum, rather than to tax the system by injecting bacterial vaccines, thus giving the organism the additional burden of making its own antibodies.

We believe that when the indication arises for the injection of vaccines, there is still one more question to be settled, namely, whether to inject the autogenous, the stock, or the mixed vaccines. We are convinced that the auto-vaccines are the agents par excellence of biologic therapy, and have made it a law that whenever it is possible to isolate a specific organism or specific organisms, the autogenous vaccines should always be made and given in a scientific, systematic, and fearless manner. Why?

1. Their use is most logical and scientific, because they produce the specific antibodies most suitable and most effective for the individual case.

2. Clinically, they have given us the best results.

3. They rarely, if ever, produce harmful or annoying after-effects.

4. Their preparation is simple, requires very little time, and is by no means expensive.

The most serious objection which can possibly be raised is that the time required in preparing the vaccines may greatly hazard the ultimate results. In rapidly progressing infections due to the more common organisms, it has been our custom to give a suitable stock vaccine as the primary dose, while the auto-vaccines are being prepared. Stock vaccines are indicated only in those cases where the suitable auto-vaccines cannot readily be obtained; for example, in the case of acne, where it requires from six to eight days for the full development of the acne bacillus culture. We have used mixed vaccines, both auto and stock, where mixed infection has been clearly demonstrated. Their use does not necessarily signify the physician's inability to make an accurate bacteriologic diagnosis, nor need there be any hesitation on the part of the doctor because of the fact that they have been designated as unscientific. The fact is that there is a clear, positive, scientific indication for mixed vaccines in all mixed infections. We do not wish to infer that all bacteria found in a given infection must be injected with one puncture of the needle. Indeed, when treating acne, for instance, we have found that the best results are obtained by injecting the staphylococcus into one arm and the acne bacillus into the other at the same visit. One should not hope to cure a case of tuberculosis with a mixed infection by injecting tuberculin alone, nor can one expect to eradicate a cystitis due to the colon bacillus and the staphylococcus by injecting the colon bacillus or the staphylococcus alone. Again, we have found that, in a great number of cases, especially the old chronic or sub-acute arthritides, neither the primary focus nor the causative organism could be demonstrated. In these one must obviously resort to a mixed vaccine. Having had a large number of just such cases led us to the use of a mixed vaccine containing as its predominating organism the most likely cause of the infection. For example: In those cases where the primary focus, as nearly as could be determined from the clinical history, lay in the respiratory tract, we have had our

bacteriologist prepare a vaccine containing pneumococci, staphylococci, and streptococci.

In the case of gastro-intestinal origin, we have used the bacillus coli, staphylococci, and streptococci.

Where the primary infection was in the aural cavity or the various skin lesions, in fact, any lesion bordering on a low-grade pyogenic infection, we have had excellent results from the injection of a home-made pyocyaneus and staphylococcus vaccine. This may not seem particularly scientific,—it may even seem empiric,—but it has given us results where all other types failed, and is justified on account of the clinical results, waiting a more exact and scientific procedure.

Clinical Considerations. As you all know, sera, up to the present time, are said to be indicated only in the toxemias, and that vaccines are indicated in the bacteriemias.

In the last four years it has been our custom to give the anti-streptococci serum in all those cases of acute general streptococci infections, acute streptococci peritonitis, and in the extremely toxic cases of streptococcus infections of the extremities.

In a series of over 200 cases of this type each patient received from 10 to 80 cc. of the streptolytic serum, and with a fall of the temperature and a subsidence of symptoms in a majority of the cases. You will understand, of course, that the sera are discontinued as soon as the auto-vaccines are prepared.

Our experience with the sera in scarlet fever has been limited to a few cases, but even in these we noticed beneficial results and never any untoward after-effects. In a surgical clinic we rarely meet with diphtheria, but in the few cases we have treated the results have been most gratifying. We have, however, noted in a few cases the symptoms of anaphylaxis which were so fully discussed before this society two months ago.

The antitetanic serum is given in all cases of injury or gunshot wounds in which there is an open lacerated wound inflicted by machinery or implements which have been in contact with the dust or dirt. This is our routine practice, and has been used in a series of over 150 cases, and so proficient has been the prophylactic action of the serum that Dr. Murphy has not seen a case of tetanus originate in our hospital patients in seven years. The usual dose given is 1,500 units. We give the serum therapeutically when occasion arises. I have had occasion to see in a distant city a case of tetanus in which the symptoms developed nineteen days after the primary infection. Repeated injections of the serum were given and the more violent symptoms subsided. The patient had no muscular twitching for ninety-six hours before his death.

Bacterial vaccines have been administered by us in all types and classes of cases such as are met in an extensive surgical practice.

Beginning at the lesions of the skin, we have treated cases of acne, furunculosis and carbunculosis, and infections of the lymphatic glands. Next we shall consider the lesions of the respiratory tract, as chronic rhinitis, asthma, hay-fever, bronchitis, empyema, and tuberculosis with mixed infection. Next chronic suppurations, including osteomyelitis and infected surgical wounds of all descriptions. Following this, chronic enteritis and kidney and bladder infections not associated with obstruction by foreign bodies. Then low-grade pyogenic or saprophytic infections, and last, but most extensive, has been our experience with vaccines in all types of acute and chronic joint infections.

Bacteriologically our cases have included almost every variety of bacteria with varying degrees of virulence. Most common among them we found the Staphylococcus aureus and albus, the streptococcus, pneumococcus, the Bacillus coli, and the Bacillus pyocyaneus.

Detailed Considerations. The principles underlying the successful treatment of acne vulgaris are:

1. The determination and isolation of the causative organisms.

2. The knowledge and experience necessary for the determination of the dosage and the interval between inoculations.

3. The general condition of patient and the degree of virulence of the infective organism.

In the series of 15 cases treated by us we found that the Staphylococcus albus was present in 90 per cent of the cases.

Theoretically, the acne bacillus should be present in every case. The difficulty of growing this bacillus is the principal obstacle to the successful treatment of acne vulgaris. This organism requires from five to ten days on the most suitable

culture media, one of which is the 1 per cent oleic acid agar.

Another reason for failure is the fact that the dosage of the acne bacillus vaccine has been much too large. In all these cases it is also necessary to watch and modify the coagulability of the blood. If this is too rapid, the patient should have large doses of sodium citrate; on the other hand, if the coagulability is too slow and the patients do not improve immediately, it is necessary to give a number of 10 grain doses of the calcium lactate.

We do not encourage this type of cases, but many of them came to us for some surgical lesions. Several of them had made "the rounds," and finally appealed to us for the vaccine treatment.

In two of our cases all the lesions subsided after three or four injections, and have not returned. Some of the cases improved so rapidly after the fifth or sixth injection. One patient was not improved at all.

The furuncles and carbuncles, of which we have treated 20 cases, have all made rapid and complete recovery. The autogenous vaccines should always be given if one wishes to obtain the best results. One of our cases, who had previously been treated with mixed stock vaccines over a period of seven months, responded immediately after three injections of autogenous vaccines. Eighty per cent of these cases showed the Staphylococcus aureus.

Glandular infections, not tubercular, are due to the Staphylococcus aureus and albus, occasionally combined with the pneumococcus. Twenty-five cases of this type treated with auto-vaccines showed rapid improvement, and the majority of them went right on to ultimate complete recovery.

We have had one case of chronic rhinitis in a doctor, the most prominent symptom of which was a very annoying sneezing, which was treated with a mixed vaccine which contained the streptococcus and pneumococcus. The sneezing very materially improved after the fourth or fifth injection.

We have treated six cases of chronic asthma in which we were able to demonstrate the pneumococcus combined in the other five. In one we noted an aggravation of the symptoms from ten to eighteen hours after the injection, but a marked improvement after the third dose. The other cases, one of which was not improved materially, did not show the reaction as did the first case. Another case of asthma, treated at the hospital under our direction, showed no pathogenic bacteria in any of the bronchial sections that were obtainable. We advised the use of a mixed pneumo- and staphylococcus vaccine. Later the interne informed me the patient's condition was greatly improved and he has had no more attacks.

Last August we treated three cases of hay-fever with a mixed stock vaccine containing for the most part the streptococcus. Two of these cases did not find it necessary to change climate during the hay-fever season, as had been their custom for many years.

Much has been written in recent months on the use of vaccines in pertussis. Zahorsky has reported 40 cases treated with favorable results in some cases. In not a single case in which the vaccine was used did any secondary infectious process appear. His best results were obtained when the vaccine was given at the height of the disease.

Graham who reported 24 cases, believes that the course of the disease is shortened and improvement almost always continued after the injections were discontinued. He observed benefit in 17 cases. Ladd reported a series of cases. After the injections mothers stated that severity and number of paroxysms were diminished.

Four cases of purulent empyema with drainage were treated by us with auto-vaccines, resulting in a rapid diminution of the amount and odor of the discharge and ultimate permanent healing. Two patients had a green pus discharge, which delayed improvement for some weeks until a suitable autogenous vaccine of the Bacillus pyocyaneus could be prepared.

In tuberculosis with mixed infection we have made it a rule to use the vaccine, together with the tuberculin injections. The vaccines are given every four or five days, and the tuberculin once each week. Both injections should never be made on the same day, as that would interfere with the temperature reaction, which is the most important guide to the size of the tuberculin dosage.

Acute and chronic surgical infections of all types offer the largest field for vaccine therapy. Under this we include all cases which are pri-

marily septic, incised or gunshot wounds, and osteomyelitis not associated with sequestra and not containing large cavities, pelvic infections, suppurations, appendicitis cases, etc. In a series of over 50 cases of this type we used the autogenous vaccines in about 90 per cent and the mixed vaccines in about 10 per cent. These cases, second to the pyocyaneus cases, give the most brilliant results. If the vaccines are properly made and the dosage and intervals properly graduated, this type should yield cures almost uniformly. The one reason for failure is the fact that the vaccines are not changed with sufficient frequency. A new vaccine should be made about every two weeks, to make sure that the organisms doing the most harm are incorporated in the vaccine. No culture can be transplanted more than two or three times without detrimental attenuation.

Another large field for biologic therapy is the kidney and bladder infections not associated with foreign-body obstruction or organic obstructions. The colon bacilli, staphylococci and streptococci, and often the penumococci gain entrance to the urinary tract and cause marked frequency and often painful micturition. One of the most striking cases of this type came to the hospital late in October, 1911, suffering from frequent and painful urination, extending over a period of about ten months. After taking an accurate clinical history, it was found that this patient had suffered from dysentery of several weeks' duration, and that her trouble dated from that time and became progressively worse. Cystoscopic examination showed no pus coming from either ureter, and the absence of a neoplasm or foreign body in the bladder. The culture from the urine made the diagnosis of cystitis due to the Bacilli coli and staphylococci. The auto-vaccines were given about every five days, and the patient made a rapid and complete recovery and has remained permanently well.

Another case, Mr. D., came to the office on December 11, 1911, giving the history of a continued illness for four months, with repeated daily attacks of severe pain deep in the perineum, associated with chills and high temperature, frequent urination (every quarter to one hour), and large quantities of pus in the urine. Prostate gland not perceptibly diseased. Culture of the urine showed Bacilli coli and staphylococci. Vaccines were made and the patient improved rapidly for several weeks, followed by a period of non-improvement for a few weeks. Another culture showed that all the staphylococci had disappeared, leaving a pure culture of Bacillus coli, from which a vaccine was made and injected in the usual way. This was in February, 1912. On April 1, 1912, Dr. Murphy made the following note: "The pains are all gone. Only one morning urination. The urine is absolutely normal." [Case has been permanently cured. July 2, 1913, patient reports himself perfectly well, with no evidence of return.]

Another patient, Mrs. G., suffering from a chronic cystitis, showed a bacillus not unlike the Bacillus pyocyaneus. The stock pyocyaneus vaccines were given at four-day intervals, and in a short time the pus-cells decreased and those that were present were greatly fragmented. This patient made a complete recovery, but had a recurrence from which she also recovered.

We have treated two cases of chronic enteritis, one of which was of tuberculin origin. This patient had from 10 to 20 bowel movements daily, most of them containing blood. The auto-vaccine was prepared, and after the first injection the blood ceased and the number of movements became less. The other case responded to none of the many vaccines given, and was later found to be a gas-bacillus infection.

We recommend the use of the prophylactic injections of the antityphoid vaccine in adults, especially in doctors, nurses and all persons liable to be exposed to the disease.

Three injections are given with an interval of 7-10 days between doses. The first dose contains 500 million bacteria and the second and third doses contain one billion bacteria each.

F. F. Russell, in the *Jour. A. M. A.*, presented statistics on the antityphoid vaccinations in children between the ages of 2-16 years.

The dosage is based on body weight rather than the age of the child. About 359 children have been vaccinated in various parts of the United States. No harmful effects were noted and not one of the children has contracted the disease, though some were vaccinated three years ago. In the absence of final information as to the duration of immunity, now children are revaccinated after about three years.

In the last three years we have devoted our best efforts to the vaccine treatment of acute and

chronic joint infections. This we have found the largest and at the same time the most difficult field of biologic therapy. The field is large, on account of the great number of cases with all types and varieties of joint infections that present themselves for treatment in Dr. Murphy's clinic. It is the most difficult type of cases from which to procure cultures for vaccines—first, on account of the large number of atria of infection; second, on account of the various types of organisms causing the arthritides; third, because some of the cases have their primary infection twenty or even thirty years before they present themselves for treatment; fourth, because it is often impossible to obtain a culture, even from the blood, which can be used in the preparation of an autogenous vaccine.

In our series of 90 cases of athritis we have been able to distinguish three classes, as follows:

1. That type of deforming arthritis of gradual and insidious onset from which no organism can be obtained, either from the joints or from the blood-streams, nor from the secretions or excretions.

2. Those cases, mostly of the chronic variety, which had their origin in ancient infection of the mouth, pharynx, tonsils, respiratory tract, intestinal tract, from which we were unable to obtain any one specific organism at the time the patients came for treatment, but who yield to mixed vaccines.

3. Those patients with acute or chronic infections of the joints in which we are able to isolate a distinct organism or organisms which we believe to have been the cause of the trouble.

The first class is obviously the most difficult one to treat and yields the least satisfactory results. One such case, Mr. H., aged forty-nine years, came to the office September 20, 1912, on account of pain and stiffness in the shoulder-, hip-, and ankle-joints. The trouble began twenty-nine years ago, when patient was twenty years old. He began having a dull aching pain in the spine, which continued four years. The pain became much more severe, and invaded both knee-joints, both hips, and both shoulders. The spine began to curve forward. Patient had no chills, no fever, no sudden incapacity—just a gradual progressive involvement of all the joints. At the time of examination the spine was fixed from the tip of the coccyx to the atlas. Repeated vaccines were made from the urine, but there was very little reaction, and therefore very little improvement. All kinds of vaccines have been given, but the result thus far obtained has been very unsatisfactory.

Another more favorable case, M. C., aged twenty-six years, came to the office on account of pain in the spine. His previous illnesses were negative, excepting an occasional coryza. When the patient was nineteen he began to have pain in the lumbar region of the spine, which was especially severe in the morning. One year later many vertebrae had become involved. No history of chills, no fever, no total incapacity at any time. We were unable to obtain any material for culture, and the question arose what to do for the patient. Working on the basis that his trouble was possibly due to a low-grade infection of some type, we concluded to give the patient injections of pyocyaneus vaccine. The first injection of 50,000,000 was given on November 14, 1911. November 21 the note on history reads: "Patient feeling much better; joints are not so painful." One injection was given each week, and December 19 the note on history was as follows: "Patient had headache and slight temperature after last injection. He feels like a new man. Even the motion in his neck has improved, and is almost painless." The injections of pyocyaneus vaccines were gradually increased, and three months after the beginning of treatment the patient was better than he had been for a whole year.

This case prompted us to use the pyocyaneus vaccine subsequently in many of the rheumatoid or deforming arthritis cases. The improvement in a majority has been slow, but progressive, and has given results which warrant its further trial.

The second type of joint cases in which we are not able to isolate any one specific organism is the one which has led us to the use of mixed vaccines. From the clinical history of a large majority of this variety of patients we find that they had a more acute onset, characterized by a chill, rise of temperature, pain and swelling of the joints, and a partial or total incapacity. At first one or several joints were involved, and later many or all the large joints of the body. Most of these cases, as they came to us, were of the chronic type, with the history of onset dating back many years. The majority had had originally some type of nose or throat infection, a

smaller number had infections of the genito-urinary tract, and then follow the alveolar infections, gastric or intestinal disturbances, the infections of the pulmonary tract, furunculosis, and other lesions of the skin in the order named. The mixed vaccines used in these cases contained the staphylococcus and streptococcus, the colon bacillus, and the pneumococcus, combined in some form or other. These are now made at our laboratory by our bacteriologists, and are combined in such a way as to suit the particular case, as nearly as possible, judging from its early clinical history. The pneumococci predominate in those cases where the ancient infection originated from the respiratory tract. Where the primary infection was in the gastro-intestinal tract or biliary passages, we used mixed colon bacillus vaccine.

One striking case of this class was a Mr. E., a farmer, who came to the hospital on account of painful and swollen knee-, wrist-, and ankle-joints. Originally, he had had some grip infection of the gastroenteric type. Cultures from the secreta and excreta, and even a culture made from the blood when the patient came for treatment, revealed no definite pathogenic organism which could be thought responsible for the original infection. Mixed stock vaccines were injected in rapidly increasing doses, resulting in severe local and general reactions. The temperature after one injection reached 103° F. After two months of vaccine treatment combined with extension and one injection of formalin and glycerin into each joint this patient, who had been unable to dress or feed himself for six months, returned home to his duties.

When a severe reaction follows the administration of the vaccine, as exemplified in the case just cited, we are positive that at least one of the bacteria incorporated in the mixture is the proper organism to be given. When no reaction follows, we are sure that very little benefit can be expected from their further use.

This line of procedure may be subject to criticism, but clinically we have had some splendid results in cases that were totally incapacitated and almost hopelessly deformed, and it shows that many of the patients may be taken from the "scrap heap" and restored to usefulness. The profession has been self satisfied in making a diagnosis of "rheumatoid arthritis," and then turning the poor victim over to the fates. It is time that some effort was made in a therapeutic line.

Finally, we come to the third class of cases that border on the ideal for vaccine therapy, namely, the multiple joint infections, from which we were able to demonstrate the offending organism. Unfortunately, these cases are in the minority in our clinic, as we get mostly "derelicts." From these we always make autogenous vaccines and can hope to get good results.

One such case, a male, aged sixty-one years, came to the office because of painful and swollen joints, with marked limitation of motion. His previous illnesses consisted mostly of painful and frequent urinations, for the relief of which he had had the prostate removed in 1907. In June, 1910, he began having dull, aching pains in both shoulder-joints, which continued until February, 1911, when the pain became much more severe, and the trouble then extended to the smaller joints of the feet. Next, the wrist- and finger-joints became involved. He came to the office on crutches and had difficulty in getting from the reception- to the examining-room. Examination of the urine showed 30 to 40 pus-cells to a 1/6 power microscopic field. Autogenous vaccines containing the Staphylococcus aureus were made and given, with rapidly increasing doses. In three months the patient left the hospital and resumed his work, walking without pain.

Another patient, Mrs. M., had for years been suffering from an extremely painful arthritis which had deformed both knee-joints and nearly all the joints of the upper extremities. The frequent and painful urinations from which this patient suffered and for which she had for years had bladder irrigations, led us to the possible cause of the trouble. The examination showed a pure culture of the Bacillus pyocyaneus. The vaccines, which are still being given, greatly improved the bladder condition after the second injection, and gave the patient increased joint symptoms the day following the injections. This patient is practically free from all pain in her joints, and should be able to resume her duties in her home.

Thus we have endeavored to tell you briefly of the earliest and original work which led to the use of the bacterial vaccines. We have attempted to define the various types of immunity and the practical application of the opsonic index. We

have mentioned briefly the indications for vaccines and sera, and gave a method for the preparation of bacterial vaccines. We recited those types of lesions in which the vaccines are applicable, including the lesions involving the respiratory, the gastro-enteric, and the urinary tracts, and the infections of the joints. We told you of our successes and cited our failures.

Conclusions.—By way of recapitulation, permit us to say:

1. That biologic therapy will in a short time, we believe, revolutionize the present-day treatment of many medical and surgical lesions, and particularly in the early acute infections.

2. That vaccines have failed in many instances to give the desired results because they were given in cases for which they were never intended.

3. That autogenous vaccines should always be given when it is possible to obtain them, but that there are cases in which there is a positive indication for mixed vaccines and occasional cases for stock vaccines.

4. That vaccines must not be expected to reconstruct tissues, organs, or joints that have been destroyed by known or unknown pathogenic organisms. That they are prophylactic against such destruction, and to be effective must be timely and intelligently administered.

5. That vaccines and sera, although now used as adjuncts in medical and surgical therapy, have done much to relieve suffering humanity, and have made producers of many who would otherwise have been burdens to society.

DISCUSSION

Dr. Charles L. Mix: I am sure that we are all very much indebted to Dr. Kreuscher for the presentation of the subject of vaccine therapy tonight. The subject matter has certainly been presented in a most complete and yet in an incomplete way—incomplete because you have not seen the cases cited. Seeing the cases that have been cured is the most important part of the whole procedure. The wonderful results which have occurred in the patients I have seen from time to time at Mercy Hospital is the thing that produces the greatest impression. To see a farmer who has been brought into the hospital unable to walk, walking around the halls after a few months' treatment with vaccine is certainly an extraordinary thing.

In Dr. Kreuscher's paper no mention was made of the injection of living bacteria into patients for the purpose of curing disease. He doubtless deliberately omitted all mention of this method of therapy, though I think that it should be brought to mind this evening merely to be condemned. At the present time much is being printed in the public papers concerning the efficacy of such a method of treatment, which from the point of view of bacteriology is, to say the least, open to severe criticism. So far as we know at the present time it is possible to attenuate living germs by growing them in suitable culture-media, but as soon as they are restored to other media their virulence returns. Granting that it is possible to attenuate a germ outside of the human body, what likelihood is there when it is reinjected into a human patient that it will not at once regain its former virulence? In my opinion it is extremely likely to do so, because the virulence is determined not so much by the germ itself as by the medium in which it is grown.

Turning now to the subject matter of Dr. Kreuscher's paper, the production of immunity by vaccines, I have this to say: The production of such immunity is certainly taking place in patients as the result of natural processes. We are daily watching the progressive immunization of our patients, oftentimes without being aware of the fact. Tuberculosis is a disease in which progressive immunization is excellently well exemplified. An individual suffering with this malady ordinarily has a temperature and a rapid pulse. The fever and rapid pulse are lowered from time to time after a period of rest, or, putting it in another way, after the patient has spent a whole night in bed he has a temperature in the morning which is either normal or subnormal, and his pulse-rate is correspondingly low. At night, after a day of activity, his temperature is above normal and his pulse-rate has risen. Why? Because during the day the patient's activities, his bodily motions, his increased vascular pressure, and lymphatic flow have led to an introduction into his body of the toxins of a large number of dead germs. From these toxins he gets his daily reaction, consisting of increased temperature and pulse-rate. Now, it is a noteworthy fact that if such a tuberculous individual is put absolutely at rest in bed for a few days to a few weeks his temperature will fall, frequently to normal. Just so soon as he gets up and moves about and exercises, his temperature will rise above normal. By his activities he has produced the same reaction which we are able to produce by our method of vaccine therapy.

Thus nature cures the case. The activity of the patient inoculates him with an unknown dose of the vaccine. He is inoculated, moreover, at uncertain and very likely too frequent intervals. Such auto-vaccination ought not to be permitted. Nature does many things well, and cures very many infectious diseases; but nature ought to be assisted whenever it is in the power of man to do so. Auto-vaccination ought, therefore, to be abolished, and in its stead the physician should step in and administer vaccines when they are necessary, and only when they are

necessary. Thus the physician can take charge of the matter of immunization, controlling it absolutely. But in order to control it effectually he must be able to control the patient's activities as well as his vaccines, which means he must have the patient under his control in a hospital. A patient up and about does not improve so much as a patient at rest in bed.

As to the various kinds of vaccines generally made use of, the best results have been obtained, in my experience, in the use of the vaccines for tubercular, gonorrheal, staphylococci, and Bacillus coli infections. In the streptococci infections, from my own point of view, I do not think that the results have been very extraordinary, yet there are cases in which the streptococci vaccines have assuredly given excellent results. Though Dr. Kreuscher did not mention the case in his report, I believe that he saved a scarlet-fever patient by the use of the anti-streptococcic serum.

Another matter of great practical importance is that of the mixed infections. I have long since been accustomed to look upon the body as a piece of soil. Just as in a garden left to itself various sorts of weeds grow up and live rather amicably together, some perhaps being of positive assistance to the others, so also in our body germs live amicably together and at times in a state of symbiosis. Instances of this are so common as to require no mention, but reference may be made at least to the mixed infections in tyberculosis. Another element comes into play in the matter of these mixed infections, and that is the variations in the virulence among the different strains of the same species of bacterium. The idea, then, of combating these germs growing together in the body by a vaccine made from a single one of them does not seem to be fundamentally sound. Most assuredly a vaccine made from several strains of the same species ought to be more efficient than a vaccine made from a single germ; a vaccine made from two or three germs that are commonly associated in an individual for the same reason ought to be more potent than a vaccine made from a single one. Therefore, I believe in the so-called mixed vaccine therapy, the more so because many of these vaccines have done remarkably well at Mercy Hospital.

As to the type of case which was last mentioned by Dr. Kreuscher, the joint disturbances, a very careful history will often reward the examiner by giving to him the exact diagnosis, as Dr. Murphy may later on say. Bacteria behave in rather a characteristic manner when they get into the human organisms, and often betray their identity by their actions. This statement is explained by an illustration; for example, after an infection of the body a secondary focus may appear in a joint a definite period of time after the primary one. From the date of the original infection and the date of the appearance of the metastasis in the joint, the physician may be able to name the germ. Recall, for example, typhoid fever—when do the joint disturbances begin? In the third or fourth week. When do the joint disturbances after the period of acute infection in gonorrhea begin? In our experience the joint becomes infected only between the eighteenth and the twenty-second day. When do the joints become infected in the streptococcic infections? In our experience the second or third. Each of the germs more commonly at fault in the joint infections has a definite time for infecting the joint after the primary infection. Again I repeat that if it is possible to obtain from the patient an exact history, it is oftentimes possible to come to a conclusion as to the exact germ which caused the original infection.

When a patient comes to consult the physician for a joint disturbance, it is usually one or more years after the original infection. Blood cultures and cultures made from the joint at this time are usually negative. A careful history may enable you to make a shrewd guess as to the organism which caused the trouble. Is there any way to find out the truth or the falseness of your guess? We have found an excellent means. Whenever the right vaccine is selected, it produces a characteristic reaction. When Koch's tuberculin first came into use it was intended to be a therapeutic agent, but by reason of the fact that it produces a characteristic response in a tuberculosis patient it became a means for diagnosis. Precisely the same thing was true of the gonorrheal vaccine. It was early noted that in cases of gonorrheal joints the gonorrheal vaccine produced a characteristic local reaction. If, therefore, you have made a correct estimate as to the identity of the germ at fault, you may confidently expect a local and constitutional reaction on the injection of a vaccine prepared for that germ. If no specific local and constitutional reaction is obtained, then it is not at all unlikely that the guess has been wrong.

These, then, are the points which I would like to emphasize: that the injection of living germs is contrary to good sense; that auto-vaccination is going on constantly in nature, but that it is time for it to be superseded by the intervention of the physician and the exact regulation of the amount of vaccine introduced; that mixed vaccine therapy is in accordance with common sense; that in chronic joint infections a careful history of the case will often enable the physician to make a correct diagnosis as to the germ at fault, and that such a diagnosis can be tested by the local and constitutional reactions obtained by the injections of a vaccine made from that particular germ.

Dr. T. L. Dagg: I am engaged only in the manufacturing of vaccines, but still there are different points which have come to me in my experience in handling the orders which come to me from physicians and the reports which they make to me of their use of the vaccines which I have made. I believe that the vaccines should be made in much higher concentration than was formerly thought desirable.

We began with the staphylococcus, say, at 100,000,000 and led up to 500,000,000, and I now have orders calling for 1,000,000,000 and 1,500,000,000 to the cc. Our physicians are using doses of a higher concentration and reporting good results where before they had failures.

This is also true of the colon type. We are making it as high as 800,000,000. They begin with the small dose and gradually lead up to the immunizing dose.

My experience with the pyocyaneous in ear conditions has been rather unfavorable (speaking of the reports received back on the vaccines I have made for that purpose). Staphylococcic in ear discharges have done better. The pyocyaneus, however, have done better than the pneumococcic, which have been very poor.

The most marked results which I have had have been in the colon in cases of cystitis, but in these again, we have used a high concentration beginning with the low dosage and gradually leading up to the high point.

The period of giving the vaccine is a factor. Used oftener than every four or five days it is a menace to the patient and I have seen greatly exaggerated symptoms and conditions made markedly worse from too frequent use. In my experience the period of five to seven days is the best for the use of these vaccines.

There is another important point: the length of time in which an autovaccine seems to be efficient. It came about in the treatment of acne cases. Some acne cases were slow in responding and we thought it might be due to the low concentration, but I believe now the efficiency is exhausted, say, after 90 days, because following an autogenous vaccine new made the symptoms will promptly disappear, and that makes me think its efficiency-period has a limit.

Dr. Joseph L. Miller: Dr. Kreuscher has reported a large number of cases, and especially a large variety of disease conditions treated with vaccines. It seems to me of all the cases mentioned, those patients with chronic arthritis are most suitable for the study of any therapeutic agent, because we are all familiar with their course. The patient grows progressively worse under all forms of treatment instituted in the past and the fact that they can be benefited by vaccine is very convincing that in these particular cases we have, in vaccine therapy, an agent of great value.

In more acute infections, where spontaneous recovery may take place in any event, it is difficult to determine the efficiency of any therapeutic agent.

We must look upon vaccine therapy at the present time as being in its initial stage and not take it up with too much enthusiasm in all classes of cases. We must always take into consideration what takes place in the patient not treated and have some control cases.

Dr. Kreuscher's statement in regard to autogenous vaccine is a very good one. At present too much stock vaccine is used and often where the stock vaccine is used it simply means that the man using it does not know the nature of the infection, for while a stock vaccine may be used where the infection is known, they are used many times with the wrong microorganism.

My own experience is limited to the use of vaccine on chronic joint, and colon infections of the kidney. In joint cases they have been made from streptococci taken from the tonsil.

In colon infections the results have been very satisfactory in those cases which formerly were most difficult to treat. I have not treated asthma but in cases coming under my observation after treatment with vaccines there seems to be some temporary improvement, but I have never seen any permanent results after the vaccine treatment of asthma.

Dr. L. Hektoen: Tests in our laboratory show that some of the antistreptococcus serums now on the market do contain antibodies, especially opsonins, that combat streptococcic infection.

In cases of scarlet fever with violent streptococcus infection such serum, injected intramuscularly in large doses, may give what seems like brilliant results. We should bear in mind, however, what Dr. Miller has said about spontaneous recovery. I remember a case of severe streptococcic infection in scarlet fever in which the use of the serum was suggested. Dr. Herrick said "let us wait until the morning." We did, and in the morning the patient was much, much better and recovered promptly. The physician must always be on his guard in interpreting results. He must not let the "post hoc ergo propter hoc" fallacy influence his conclusions as to therapeutic results.

I was greatly surprised that Dr. Kreuscher in reading the paper did not mention gonococcal arthritis in connection with his summary of arthritic infections because it is my impression that this is one of the most important forms of chronic arthritis, and frequently amenable to specify vaccine.

As to mixed vaccines, it seems to me that here it is particularly in order to proceed thoughtfully and carefully. It may be perfectly proper to use mixed vaccines, provided we are sure we have true mixed infection to deal with, but as emphasized in the paper it is best to proceed slowly so as not to fall into routine methods but study every case carefully and always establish so far as possible an accurate etiologic diagnosis.

There is one thing I wish to emphasize particularly, and that is that the physician himself should make, or have made under his immediate directions, the vaccines when called on to use them. He knows the patient and the bacteria involved; consequently he can judge of the vaccines needed better than some one in Philadelphia, Detroit, or Kansas City. It is not at all necessary as has been pointed out, to give the vaccines *mixed*. They may be given separately,

one in one arm and another in the other, and in that way the doses can be regulated much better than in the ready-mixed vaccines which should be discarded.

Dr. Murphy (closing discussion): This is a topic that we have been very much interested in for a long period of time. It is a topic that is finally going to take hold of us and is going to rob us of some of our surgical practice. It is a topic that, I believe, admits of much hope for the future. It is a topic, as we now look on it, in its very initial stage, acting on information that we are getting from clinical observations, that is moving us to feel cautiously each succeeding step in its advancement. It is with the hope of bringing out discussion and getting the experience of other men and gathering new light from their experiences that we present this clinical report tonight. It is not a paper. It is not in that sense that it is presented. It is just stating the facts to you as they come to us from clinical observation, and these facts we hope will lead us in time to do better work and to obtain better results than we are obtaining.

There are a number of things that we know little or nothing about concerning metastatic infections. There are a few points in which we see some rays of light in metastatic infections. First, the time at which metastases take place is just the opposite of the time at which they should take place. What do I mean? The metastases never take place when the infection is at its height of severity, but they take place in the early days of recrudescence, except in streptococcic infections. If one has an inoculation with a streptococcic infection, one can have the cocci transmitted through the blood and lymphatics, and taken out of the blood in the local metastatic point within a few hours after their admission. If we have admitted into the skin or beneath the skin a staphylococcus infection, it may not show a metastatic focus for days and weeks. All of us, men with gray hair or no hair, recall the time when we, as young men, saw pyemia in its rampant form. When did the patients get the pyemic chill? Not the day they got the infection, not two days, but eight days to three weeks after the infection; that is the time they have the pyemic chills except in the streptococcic variety. Here again with typhoid fever we have the typhoid bacilli in the blood within a few days after the infection; when do we get the metastases? Barely ever before the end of the third week. Why? As the bacilli are floating around in the blood so freely all the time, why is it that when they commence to diminish and disappear that we get the focal metastases? Again, the older men who lived in the days of virulent diphtheria, when you had six or eight deaths in a family in one epidemic, remember that when these patients died from mycoses (cardiac and cerebral) they did not die in the early days of the diphtheria. They did not die when the microorganisms were most prevalent. When did they die? Not when the gangrenous patch was on the throat, but at the time it was thrown off or shortly thereafter. That is when they died. That is when the myocarditis manifested itself; that is when the paralyses appeared: when the diphtheric membrane fell off and you said, "I will make my last visit tonight. My patient is cured." You were called before midnight on account of the rapid pulse, the acute delirium, or the "vivaciousness," the cyanosis, etc. The patient was dying and died before daylight. These conditions we did not then understand, but they are now being cleared up as the knowledge of bacteriology, metastases, and immunity is developing.

We know little or nothing of the etiology and modus operandi of metastases. We do know, however, the relative time at which they take place in the various anthritides. We know as precisely as we know when to expect the eruption in measles, scarlet fever and typhoid, when to expect the arthritis after knowing the time of the primary distal infection. We know from the character and description of the primary infection what the probable cause of the metastatic infection was. When a careful analysis of these cases is made, one can invariably find out just where the primary infection was located, what the metastatic infection was, and then, from the etiology, form an idea of how destructive the pathologic lesion is going to be to that point. Since 1904 we have been endeavoring to impress on the profession the etiologic relationship between the nasal, pharyngeal, cholecystic, dysenteric, alveolar, tonsillar, genito-urinary, furuncular, antrum, mastoid diseases, and the acute and subacute arthritides-so-called, rheumatism, as phases of these infections. More recently the profession is accepting inflammation of the tonsil as an etiologic factor in arthritis; it is not at all as frequently a causal factor as some of the other infections mentioned above. We have named these in order of frequency in which they appear to metastasize as arthritides. The connection between these inflammatory infections and the joint lesion is as closely related as the fever, sore throat, etc., of scarlet fever is to rash, and is as easily recognized, when one learns of the "regular" period of time that must elapse between the primary infection and the joint manifestation of it, namely, the "period of metastasis." We have failed to connect the primary infection with the secondary joint manifestation for so many centuries, because of the length of time that must necessarily elapse between the two in the disease cycle.

A patient has a grip infection, which is one of the more common causes, and when the grip commences to get better, he suffers from "rheumatism" of his hip or elbow. He will tell you he has rheumatism, something has happened that on the tenth, eleventh or twelfth day gave him a chill (exposure to cold, wet feet, draft, overeating, etc.). You know, from the clinical fact that his rheumatism began with a chill, that that man in all probability is going to have one or more joints ankylosed as a result of that infec-

tion. That is now new. Dear old Dr. Hollister, who gave me the only lecture on pathology I ever had when a student, described rheumatism in that lecture, described the differential diagnosis between pyemia and rheumatism. He said pyemia in joint infections began with a chill always; rheumatism did not. That is exactly true of the metastatic arthritides today. When they begin with a chill they result in an ankylosis and a destruction of one or more of the joints. That is a clinical fact. When they do not begin with a chill they rarely result in ankylosis. Take, for instance, the infection we know the most about, in connection with the Neisserian types of arthritides. When do they metastasize? In our analysis of them 96 per cent of the cases metastasize between the eighteenth and twenty-second day. You ask the individual patient what happened. He will say, "I was exposed to the rain"; "I stood in an open door"; "I stood in the front of the street-car." He did something, and did it between the eighteenth and twenty-second day. How many times do patients do one or all of these things preceding the eighteenth or following the twenty-second day without gonorrheal metastases! That merely shows that there is a time in the cycle of these infective lesions when they are prone to metastasize under favorable conditions; that there is a definite time for the appearance of the metastases, as well as a definite place for their localization. Every one of the infections has its own definite time.

The next important item is that of treatment. In the treatment of these lesions we believe that probably the best results must and will come in the future and do come to us now from giving vaccines in the early inflammatory stages of the disease, together with the mechanical aids at our command and the chemic neutralization of the local infection. In the chronic arthritides of many types, and in the acute arthritides, the laws of vaccine treatment correspond in every essential to the primary laws laid down by Pasteur on fermentation, and you cannot do good vaccine work unless you know the essential principles of his individual work.

THE ETIOLOGY OF HYPERTROPHIC RHINITIS.*

J. A. PRATT, M. D.
AURORA, ILL.

In many books examined the etiology of hypertrophic rhinitis was given the same in nearly all. The exceptions are taken from what is considered one of our best works. In Ballenger's second edition, under the etiology of hypertrophic rhinitis, he states that: "the causes of hypertrophic rhinitis are essentially those given under turgescent rhinitis. When there is an anterior deviation of the septum there is a negative air pressure within the nasal chambers with each inspiratory effort. The hyperemia resulting therefrom leads to an over-nutrition of the mucous membrane, especially of the 'swell bodies.' The contact of the deviated septum with the mucosa of the inferior turbinate irritates it and thus still further excites the hypertrophic process. The altered secretions add to the irritation, and still further increase the hypertrophy of the mucous membrane."

We take exceptions to two statements in the above, first, that the increased negative pressure causes hypertrophy, because we find that the hypertrophied turbinate is on the concave side of the deviation where the breathing space is the greater, and where the negative pressure would be the less, if there were a negative pressure, which we do not believe. Second, that the contact of the deviated septum with the turbinate causes it to still further hypertrophy, because as a matter of fact the turbinate that is pressed by a portion of a deviated septum shrinks and atrophies.

When a person cannot obtain enough air through the nasal passage, he becomes a partial mouth breather, and this fact, in our mind, precludes the possibility of a negative pressure in the nasal chamber. This of course is in unconscious breathing, which is the normal state.

We believe that localized hypertrophy of nasal tissue, when the septum is normal, is caused by the irritation of the abnormal secretions, as in sinus diseases, etc. If the sinus condition could be cured without destroying the hypertrophic tissue, this tissue would tend to return to the normal, if it is a simple hypertrophy.

We believe that when we have a normal septum, with no sinus trouble present, and there is a turgescence that closes the nasal chamber, or we have an alternating stenoses, we should look to the irritating condition of the blood, due to auto-intoxication from whatever cause. If this blood supply to the part continues, there will be hypertrophic tissue formed.

In years passed when we had hypertrophy of the turbinate opposite the concavity of a deviated septum, we removed part or all of the turbinate, or gave it linear cauterizations. In the cases where we used the cautery with seemingly perfect result, we found when the patient returned

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after some months, that the condition was nearly as bad as ever. It was not until we began the corrective submucous operations on the septum, that we discovered the condition improved instead of becoming worse as time passed. All of us have seen this, not only in our own cases, but in those operated upon by others. For over a year now, we have not operated upon our simple hypertrophied turbinates, but corrected the septum, and where we left a turbinate lying against the replaced septum, the turbinate would decrease in size until the space was nearly normal; while the atrophied turbinate on the convex side of the septum would increase in size.

Two functions of the nasal cavity are to warm and moisten the air as it passes to the lungs. It is with these two functions that we have to deal in discussing the etiology of hypertrophic rhinitis. In a normal nasal cavity the air is equally distributed on each side of the septum, and there is a normal space between the turbinates, and the turbinates and the septum, so in complete turgescence the nasal cavity can be entirely closed. In the physiologic action of the normal nasal cavity, there is just turgescence enough to properly heat and moisten the air, as it passes to the lungs. The stimulus that acts upon the nerves to regulate the amount of blood to these parts, is the amount of air passing through a given side of the nasal cavity. If this amount is increased there is a greater turgescence, if less, the turgescence is decreased. As the amount of blood to a part determines whether it shall hypertrophy or atrophy, so in this instance we have hypertrophy or atrophy according to the increase or decrease of the amount of air passing through the nasal cavity.

When we have a deviation of the septum, as from an injury, the bent septum causes an enlarged nasal cavity on the concave side, and a smaller nasal cavity on the convex side. Following the natural physiologic impulse, there is an extreme turgescence on the concave side to properly heat and moisten the extra volume of air that is passing through. As this cavity remains large, the chronic dilatation of the venous plexuses causes their walls to thin to the point where the contractile tissue cannot empty the plexuses, and we have the soft baggy condition of the turbinate that undoubtedly precedes the hypertrophic condition. On the convex side of the septum the reverse takes place, and we have atrophy. This explains the conditions as we find them.

If the above etiology is true, it behooves us to be conservative with our turbinates, and try to restore the septum to its proper position.

DISCUSSION.

Dr. William L. Ballenger of Chicago: The doctor, I think, is a little bit mistaken in the fact that we do not have pressure in the more open nostril. As a matter of fact, when one side is partially closed the entire amount of air needed for respiration purposes must pass largely through one nostril, and there is just as much pressure on one side as on the other. There could not be more pressure in the partially closed side than on the other; both cavities are freely communicable. So that there is not an increased negative pressure on the closed side and in excess of that which is on the open side. The pressure is just the same on the two sides.

I think the doctor is entirely right in adding this feature that the physiologic response from the current of air going through the more open side is the essential physiologic factor in the production of hypertrophic rhinitis, and I am very glad to hear him bring out that point. We must always differentiate between turgescence and hyperplasia. Dr. Kenyon of Chicago has defined hypertrophy thus: He says that if you will put ten pigs in a pen and come back in a hundred days and find one hundred pigs in that pen, that is hyperplasia. If you put ten pigs in a pen and in one hundred days there are still ten, only larger, that is hypertrophy.

The hyperplasia is due to a low grade, long-continued irritation. It is not due to irritation exceeding that which produces increased physiologic activity.

I have an idea in relation to what has been quoted from my text-book and what the doctor has said, that another factor enters into the etiology of hypertrophy of the inferior turbinate, and that is oftentimes there is sinus disease in the ethmoid region—that is, the ethmoidal sinusitis—and with the discharge of secretions from above, going downward, there is produced more or less stimulation, not amounting to an actual irritation, but an increased physical activity in the inferior turbinate tissue, which might result in also bringing about a hypertrophy of the mucous membrane, but in general we must think of hypertrophy as due simply to an increased nutrition to the part. Partial obstruction to the nose has been long recognized as the chief etiologic factor in hypertrophic rhinitis as well as in turgescent rhinitis. Ordinarily the latter is only a forerunner of hypertrophic rhinitis.

Dr. G. H. Mundt of Chicago: I may be wrong, but it seems to me that there must be a difference in the atmospheric pressure on the two sides of the septum. It appeals to me that with two cavities

of unequal size, probably from a deviation of the septum, in which the opening is the same anteriorly and posteriorly, the same amount of air can enter both sides, but it seems to me that there must be less pressure on the side of the concavity.

It has been my belief for some time that the decreased atmospheric pressure on the side of the concavity causes an engorgement of the turbinal body with an exudation of serum into the turbinal tissue, giving the intumescent form of rhinitis; and then, because of the increased nutrition, the cells composing the turbinal wax fat and we have the hypertrophic rhinitis; the process continues and the cells eventually, because of the increased nutrition, are increased in number and this is hyperplasia. This view is supported by the fact that clinically there is usually an enlargement (usually intumescence) of the turbinal on the side of the concavity.

Dr. Pratt (closing the discussion): I think that what Dr. Ballenger said agrees with what I announced here. In reference to what he calls hyperplasia, of course, we have hypertrophy and enlargement of the turbinate. We naturally have enlargement of the elements which make for hypertrophy. But I consider hyperplasia exists when we have enlargements on the ends of the turbinates, anterior and posterior, caused by the downward sinus secretions. It is a local irritation. What we call hypertrophy of the turbinate is generally due to enlargement of all of the turbinal elements on the concave side of the nasal septum.

I would like to cite one case, which may answer some of the points brought up. February first I did a submucous section on a gentleman who had a pretty complete deviation. The ridge was pressed right up to the lower turbinate on the left side and a very large lower turbinate on the right side, so much so that when the septum was straightened up the turbinates on the right side, both upper and lower, touched and lay right against the septum. It practically occluded that side for nearly two weeks. At the end of that time the tissues began to contract and he could breathe freely through the side that was occluded, and there was no part touching. While the atrophied part on the other side had not enlarged, the membrane which previously was pale, was very red, and showed that it was working in a physiologic way. I have noticed this condition in a good many of my cases, and that was what brought this theory to my mind. This demonstrates to my mind that the cause is simply a stimulation due to the over-amount of air passing through the enlarged cavity.

Dr. Ballenger: What is your impression about the air pressure on the two sides?

Dr. Pratt: I cannot see how there would be much difference. Breathing does not pull the air in with a strong suction. Normal breathing (fifteen or sixteen times a minutes) simply elevates the chest. Air goes in. If not enough air goes through the nose he opens his mouth and breathes through it. When a man is running I can conceive how there would be slight negative pressure, but not enough to cause the influx of blood to bring on hypertrophy. In normal breathing if enough air cannot go through the nose, the opening of the patient's mouth precludes any chance of negative pressure.

VENTILATION RATHER THAN DRAINAGE ESSENTIAL FOR THE CURE OF SINUS DISEASE, WITH SPECIAL NOTES ON THE ANTRUM OF HIGHMORE.*

L. OSTROM, M. D.,
ROCK ISLAND, ILL.

Probably Pynchon was the first to lay stress on the value of ventilation in nasal diseases, especially in what he calls the attic, but he did not place it above, or even of as great value as drainage. While talking to Ballenger several years ago about my method of operating in the nose, he said that we must soon change our ideas about the nose, and obtain ventilation rather than drainage. Since then the great advance made in the study of non-suppurative sinusitis in which the question of drainage is not an issue, the absolute value of ventilation of every sinus is definitely established.

I have seen very little change, if any, in the treatment of antrum cases in our larger clinics during the last ten years. What I have seen is usually as follows: Removal of a part of the inferior turbinate. A hole is made in the inferior meatus into the antrum. Packed with gauze. Indefinite period of irrigation, with all kinds of antiseptics and astringents. This is the same in New York, Philadelphia, Chicago, etc. It has not been my luck to see any case which has been first subjected to exenteration of the ethmoids or the straightening of the septum in any of the clinical cases I have had an opportunity to examine.

Last summer while visiting Dr. T. J. Harris at the New York Post Graduate Hospital, a typical case appeared that had had a number of antrum operations. The opening in the inferior meatus, which had been reopened only a short time before, was again almost closed. Dr. Harris then called my attention to the case and said that this case demonstrated the impossibility of using my

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antrum punch. I was just about to tell him that it was an ideal case to demonstrate its use, when he asked me to operate on the case with my instrument, saying that it had caused him a great deal of trouble because he could not use it, especially not in this case. When I showed Dr. Harris and the visiting doctors how easy and quick my instrument worked, and what a large aperture was produced way forward to the anterior angle of the antrum, and way back almost to the posterior wall, he asked me to describe the technique in detail at an early date. It is due to Dr. Harris' suggestion that I present this subject at this time.

In every case, unless the middle turbinate had already been removed (and, by the way, in nearly every case there is very little normal tissue left on the middle turbinate), at least the anterior

Fig. 1. Method Showing the Enlarging of the Ostium Maxillare.

½ or 2/3 was removed. I always try to remove enough of the middle turbinate so that what remains is at least ¼ inch behind the hiatus semilunaris, so that it can't in any way block any of the apertures. If the septum was deflected it was straightened, usually by submucous resection, and, strange to say, I have had no infection or delayed healing in submucous resection in these cases any more than if the case had been a clean case, a fact which I attribute to the omission of packing. Any or all of these preliminary operations may be done at the same time as the antrum operation.

Technique. With a probe the natural aperture into the antrum is found, the distance from the tip of the nose measured and located. Sometimes the hole is so small or buried in the hiatus semilunaris that a probe can't penetrate, especially in the thickened ozenic cases. The reverse antrum forceps is then introduced closed with the blade down, as far back as the measurement with eye the blade is opened and turned outwards into the hiatus semilunaris, to the point leading to the probe indicates. Under direct view of the the foramen of the antrum. By opening the handles of the forceps, the blade points almost directly outwards, and by firm pressure it easily penetrates into the antrum. Hook the blade of the forceps into the antrum and pull forwards hard, close the handle, and a piece of the uncinate process, as big as the blade is removed. After the first piece is removed it is easy to reinsert the blade of the forceps, and by cutting up and down, the antral wall may be removed as far forward as the anterior angle. At this stage I resort to Weir's or Prince's turbinate forceps, and insert one blade into the antrum, through the aperture made by my forceps, and remove the posterior portion of the antrum wall as far back as necessary. If you go too far back there will be severe bleeding, demanding packing for its control, and if you go too far forward the lachrymal canal may be injured, but it is not necessary to go so far. The edges are made smooth and the operation is over. It should not take more than five minutes for the whole operation.

The aperture obtained is about 1 inch long, and ½ inch wide. The technique for the inferior meatus is essentially the same except that the antrum wall must be punctured by some form of trocar, in case the bone is thick. I have entirely abandoned the inferior meatal route in favor of the middle meatus, because my results have been more satisfactory. No packing is used after the operation. As soon as the aperture is of fair size I usually insert a large canula and wash out the fetid pus so that the breath of the patient will not be so offensive.

On the third day, if there is any odor to the discharge, I again wash it clean, and by tipping the head all the water is emptied and the cavity left dry. In about four to six days this is again repeated. Later, about two or three weeks apart, the cavity is again washed.

I do not give the patient anything to use as a nasal spray or douche, unless the odor becomes offensive and the dried discharge forms large scabs. In such case I instruct the patient to fill a bowl with warm water, to which may be added

Seiler's tablets, or baking soda and salt. He is told to bend the head forward, way down, so that the nose points straight down to the floor. The nose is put into the bowl and the water is drawn up into the nostril until he feels it enter the antrum. The head is then tipped so that the solution will run out. This is repeated until the nose is clear. The patient is particularly warned not to draw the water back into the throat—only half way up in the nose.

With little exception this is the routine of my treatment, and, whether it is good luck, coincidence, or something else, I (and my patients) are

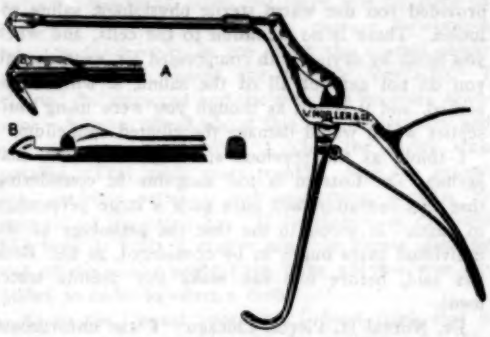

Fig. 2. Author's Improved Antrum Forceps.

satisfied with the results, and so far all my patients have gotten well.

Subsequent treatment is just as easy as after any other method.

The objection to the inferior meatal route is that in past years I had a number of patients who had permanent holes, but the antrum would fill from within, the mucus from the nose would gather on the floor, and for hours at a time the aperture would be closed by this mucus, which oftentimes dried and formed a hard scab which prevented ventilation.

The inspired cold air seems to produce more sensation when it enters the antrum below the inferior turbinate than when it enters from above. At any rate I have not yet had any patient complain of any irritation from the air, whatever, as they used to do.

In the Cooper (alveolar) method, drainage by means of a tube fitted into the tooth socket seldom if ever cured a chronic case.

In the Kuster (labiogingival) operation, drainage is ideal, but I never saw a case get well, although the aperture was big enough to insert the finger, until an opening was made into the nose and the labio-gingival opening closed. The same is true when necrosis has produced a perforation through the palate directly into the mouth. Of course the Cooper and Kuster operations are, or ought to be obsolete, but they were ideal for drainage. They also prove the small value of drainage alone.

An analogy exists in the ear in chronic purulent otitis media, which frequently get well with better results without a radical mastoid operation, if the discharge can be kept out and the ear kept dry. The caries ultimately comes to an end, as it does in the nose, and the ear heals up, in proof of which we have the thousands of cases of residual otitis media, which discharged for years and years, in which the caries finally came to an end and the ear got well. Function of course may not be re-established, but it certainly is just as good as that obtained following a radical mastoid, which by the way, do not always get much better after, than they were before, the operation, as far as the discharge is concerned. It has been my observation that the ear gets well just as soon as the swollen mucous membrane becomes normal, and the air again can pass into the mastoid antrum and the eustachian tube.

If the ethnoids are polypoid, unless every cell is opened and ventilated, polypi will continue to form and close up the nose. Ballenger's late work in x-ray of the sinuses demonstrates the unsuspected presence of many hidden pockets of pus, etc., which must be emptied and air substituted before the patient is cured.

Any other method of operating which obtains the same results is of course just as good as the one I describe, but I know of none that is as simple and as quick.

In conclusion I maintain that appropriate surgical work must be resorted to by whatever method one may prefer for all the sinuses, in order to obtain a cure. But a cure is not obtained until every sinus is open to the air current passing in and out, through the nose, and ventilation thereby obtained.

ABSTRACT OF DISCUSSION

Dr. Joseph C. Beck, Chicago: Mr. Chairman and Gentlemen: I am very much surprised at some of the statements made. One, for instance, that all cases are cured without any reference whatever to the pathologic condition that existed in these sinuses. I think if the doctor will investigate he will find that there are cases that it is impossible to cure by

a dozen openings, high up or low down. I have made examinations of the lining membranes and the bone leading into antra, and find that there are changes which it is impossible to get rid of by any kind of an opening.

I think that the opening described by the essayist is a move toward progress in establishing ventilation.

Dr. William L. Ballenger, Chicago: I have been very much interested in Dr. Ostrom's presentation, and especially inasmuch as he has emphasized the value of ventilation rather than drainage. And yet I can conceive that in many cases this would cure the disease. I believe that ventilation is of tremendous importance in these cases, but, as Dr. Beck has pointed out, of course it could not cure cases with sequestra. Those sequestra must be removed. But I have not had the difficulty of the openings in the inferior meatus closing which the Doctor intimates would very often happen. By my modification of the Canfield operation you not only get ventilation, but drainage as well, and it seems to me that the ideal operation should include both drainage and ventilation, and should not be limited to simply one or the other. I have done a number of these operations and have, I think, had universal success. Hereafter, in the worst type of case that comes to me, I shall not only open in the inferior meatus by the nasal route, but I shall also open above the inferior turbinated body, and thus establish better ventilation perhaps than can be gotten through the inferior meatus.

Dr. A. H. Andrews, Chicago: I hardly agree with the doctor on some of the points which he makes, while I fully agree with him on others. I fully agree with his ideas on ventilation—I believe ventilation is absolutely essential. It makes no difference how good drainage may be, if you have not let the air into these cavities freely they will not recover, or, if they do, will not stay well. But I am afraid that the doctor in time will change some of his ideas regarding the size of the opening necessary for ventilation. Nature made provision for ventilation through a very small aperture, and placed that aperture in such a way that the air passing by it would exhaust and refill the antrum with each inspiration and expiration. My observation has been that the cases with the largest openings do not always get along the best.

Then, with regard to washing out these cavities. The doctor says that he washes them just as little as he can get along with. I think if he would stop washing entirely and blow the pus out with compressed air they would get along much better. Air is the natural filling for these cavities, and after washing them he will have to dry them before the healing process will go on, and I believe that a current of air is just as good for cleansing purposes as any fluid preparation that can be used.

Dr. Frank Brawley, Chicago: I can subscribe to what Dr. Ostrom says about his antrum punch, because I have come to follow the route which Dr. Ostrom has selected, not only for the operation, but in every case where I desired to investigate the condition of the antrum diagnostically. I find that by using a curved trocar in this region I have less difficulty in getting into the membranous portion of the meatus than I formerly did when making my punctures in the inferior meatus. It is much more comfortable for the patient and I think, on the whole, there is less discomfort afterwards—less bleeding, perhaps.

As regards the irrigation of the antrum or the use of air, I use both, because after using the simple blowing out process I found that often I was able to irrigate secretion from the cell, and I can see no disadvantage in using irrigation with a mild force, provided you use warm sterile physiologic saline solution. There is no irritation to the cells, and when you finish by drying with compressed air, even though you do not get out all of the saline, it will be absorbed, and it is not as though you were using antiseptics which would damage the ciliated epithelium.

I think, as the previous speakers have said, that perhaps Dr. Ostrom is too sanguine in considering that this operation will cure such a large percentage of cases. It seems to me that the pathology of the individual cases ought to be considered, as Dr. Beck has said, before one can make any definite statement.

Dr. Norval H. Pierce, Chicago: I was unfortunate not to hear the paper, but I can see from the discussion, however, that the question is as to whether we should drain from the inferior meatus or puncture the maxillary sinus. Lately I have given up in radical operations on the maxillary sinus opening into the inferior meatus. I have not touched the inferior turbinated body, but have enlarged the natural opening in the middle meatus, and I find that the cases do exactly as well, if not a little better, as from opening the inferior meatus and destroying a part of the inferior turbinated body. I believe that fully eighty per cent or more of the acute cases can be treated through the natural opening in the middle meatus. In the chronic cases, especially, there is no doubt but that rarefying osteitis, occurring here about the natural opening, tends to enlarge it. In those cases where we can not irrigate through the natural opening, an opening may be made through the middle meatus so that irrigation can be very easily carried out in this manner. This is a much more satisfactory treatment to the patient.

To say, however, that we can cure all cases in this way—chronic ones, where the mucosa is a thickened mass of tissue, polypoid or otherwise, is going rather too far, I believe. My custom is to first exhaust intranasal methods of treatment before resorting to radical measures.

Dr. Ballenger: I would like to ask Dr. Pierce to explain his remark that ninety-odd per cent of the acute cases can be cured through the middle meatus. Do you mean by operation?

Dr. Pierce: They can be treated through the natural opening, by irrigation, without operation. It is my opinion that, as a rule, if an apparently acute condition does not yield to such treatment it is not an acute attack but an exacerbation of a latent chronic condition.

Dr. J. Holinger, Chicago: I wish to differ in several points, one of which is that I do not think that simple ventilation will always suffice, and I have a pretty good argument in this connection. I had treated a patient for at least nine months, and had no difficulty in getting through the frontal sinus with the largest tubes that were at my disposal. There was absolutely free ventilation, and still this man, as soon as I did not wash out the sinus for two days, had fearful headache. I opened, and found the antrum abnormally large, but there was no trace of retention of secretion, but the mucous membranes were so thick—may be ten times the normal thickness—that they caused the terrible headache. I cleaned the sinus out and the man had no more headache. I have talked about this case repeatedly and will not go into details. I filled the cavity with paraffin. That made more trouble. Still the patient was perfectly satisfied with everything, because he was rid of his headaches. If ventilation or drainage had been at fault, I cannot see how simple cleaning out of the cavity could have done all that was expected in order to effect a cure.

As to the Denker operation, I don't think that it is necessary to remove the lower turbinal. The lower turbinal acts as a police in front of the opening of the lower meatus. The Denker operation would leave the lower turbinal just as intact as possible, because it is the very thing; still the opening is always there and cannot close because we have put the flap of the floor of the nose in the antrum.

As to drainage through the middle meatus in acute cases, there is no question that it is sufficient, in the vast majority of cases. Washing out through the meatus usually does good work. But there is certainly a large number of chronic cases where you do not get any result through the middle meatus. In 1897-8 there was a long discussion in the French literature about all these openings through the middle meatus, and every one of the writers coincided with this: No matter how large you make the opening, it will close again, and in six months, a year or two years the opening is closed and the same trouble that necessitated the operation is there again, and a second operation is needed. This is why much more extensive operations than the Denker are performed. Of all those I prefer the Denker operation, especially, as I said, because there is no need of removing the lower turbinal.

Dr. Frank Allport, Chicago: Dr. Ostrom has made one or two remarks that I do not like to go unchallenged, although they are not really relevant to the paper.

He says he does not approve of sealing up the eustachian orifice in the mastoid operation. He thinks it should be kept open to perform the function of ventilation. Dr. Ballenger, also, in his clinic yesterday made the same remark, and said that in all his experience, which we know is very extensive, he had never seen an eustachian orifice closed up in spite of all efforts to do it. I desire to say to Dr. Ballenger that I have seen hundreds of eustachian orifices closed permanently, and am convinced that this is the proper treatment. I bur out the eustachian tube down to the isthmus with different sizes of hand burs, scrape the bone at the orifice in order to achieve an inflammatory condition there that when it passes will seal the orifice. I am much disappointed when I do not accomplish this as it allows a constant dripping from the eustachian tube and the appearance of an uncured case. I think we should always try to close the tympanic orifice of the tube in order to really complete the cure. In a large majority of cases after the radical mastoid operation we do not get a complete new drumhead, that is, a complete healing over of the end of the meatus, whether you call it drumhead or not, it makes no difference. There is a large number of cases with an opening through this new drumhead, or membrane, or whatever it may be, and unless we get a closure of the tube the discharge will go out through that opening and there will be a discharge from the ear.

Dr. Ostrom makes another statement that I do not like to go unchallenged, and that is that a pretty large proportion of cases of radical mastoid operations are not cured; that is, that even after going through the operation and the subsequent treatment, we still have a discharging ear, necrosis, etc., and another operation may be necessary. I do not feel that this is true. I have watched cases in my own practice and in the practice of others and I conscientiously and honestly believe that the encouragement is great for a permanent cure and for good practical hearing, especially if we seal up the tympanic orifice of the eustachian tube.

Dr. Ostrom (closing the discussion): Of course, in presenting a subject as briefly as I did this it is impossible to even begin to consider physiology or pathology. I take it for granted that that subject is considered before we begin to do antrum surgery. I also take for granted that when a man does antrum surgery to the extent that the distinguished body here assembled has reached, that the question of leaving a sequestrum and only trying to obtain ventilation is also not in any way considered. I will cite a particular case which is as bad as any need be, a case of an engineer who had been operated on by a very noted surgeon. The palate had been removed and the lower portion of the antrum had been removed. He had a hole big enough to drive a train in, to use an expression. The hole was pretty big, but it was continually closing. He had ventilation when it was clean. Had drainage all the time. He was eating pus all the time. In that case I did not attempt to

remove the necrosed bone that still remained, because we cannot always remove it all. In such cases it is all right to leave it alone.

If we have a pathologic condition, if we have a sequestrum, or if we have necrosis, of course we take it for granted that we have sense to take care of that. If you don't take care of that surgically, you will not obtain a cure.

Regarding Dr. Holinger's case, that was an obstructed case. As soon as the opening closed he had trouble—it did not ventilate—it did not drain. You can pack as much as you like in there, as soon as you take it out the mucous membrane swells up and you get obstruction. There is neither drainage nor ventilation. If there were, you would not have pain. There is never pain unless obstruction is present.

The case mentioned by Dr. Pierce is of the type to which I drew particular attention. In cases where we have polypoid conditions I cannot always clean out the ethmoid by any means, any more than anyone else. I do not cure all the chronic cases—the polypoid conditions. These polypi reform, block up the nose, and you have the same condition as before. But in those cases where we have a big opening into the sphenoid, where you can see the pus running out, draining freely, if you do not get the air in easier than the pus comes out, the patient will not get well. Ventilation is more important than drainage, because you cannot have ventilation without drainage, but you can have drainage without ventilation, and as a result ventilation must be more important than drainage. The two must go together.

DIAGNOSIS AND TREATMENT OF MENINGEAL COMPLICATIONS OF SUPPURATIVE DISEASES OF THE TEMPORAL BONE*

NORVAL H. PIERCE, M. D.
CHICAGO, ILL.

It is essential in the diagnosis of otitic meningitis to understand the various ways by which inflammation may spread from the otic structures to the meninges. The most frequent portal of entry into the subdural spaces is by way of the labyrinth, most frequently through necrosis of the external semi-circular canal, next in frequency through the fenestra ovalis, and next through the promontory of the fenestra rotunda. Meningitis may also accompany sinus phlebitis, but does not happen nearly as frequently as the meningitis of labyrinthian origin. Osteitis of the roof of the antrum and the cavum stands in frequency between the two as a portal of entry. Meningitis may also complicate brain abscess, but in this again the abscess is caused by pathogenic microorganisms conveyed through the same channels as that which produces a primary meningitis.

The bearing which the mode of infection of meningitis has to diagnosis becomes apparent when we recall the symptoms which accompany the invasion of the labyrinth, namely, vertigo, vomiting, nystagmus. These symptoms may occur just preceding the meningeal symptoms or they may precede the meningeal symptoms by months or even years, and it is essential, therefore, in all chronic discharges from the ear with meningeal symptoms to question very carefully into the history as to the occurrence of attacks of vertigo and vomiting. Not only is it essential to establish the way in which the suppurative process has gained access to the interior of the skull, from a diagnostic standpoint, but because it has very important bearing on the method of therapeutic surgical attack, as, for instance, if we have a meningitis due to the extension of the inflammatory process causing a labyrinthitis to the subdural spaces of the meninges, the first essential step is the thorough opening of the labyrinth before we open into the subdural spaces for drainage.

The most frequently occurring symptoms of meningitis is headache. This may or may not be localized, it may or may not be continuous, but is usually very severe when present, causing the patient to cry out in a voice that has been characterized as the meningeal voice.

The next in frequency is the stiff neck, which in all probability is caused not so much by the inflammation as by the increase in the cerebrospinal fluid. The pupils are frequently unresponsive to light. In over seventy-five per cent of my cases the Kernig sign was present, and in fifty-three per cent the Babinski sign was present.

All these symptoms may be present in either a serous meningitis or a septic meningitis. We cannot depend upon them, therefore, in differentiating these conditions, and from a clinical standpoint it is to my mind essential that we differentiate these two conditions. As you may know, medical men are divided into two groups regarding the identity of serous meningitis and septic meningitis. One regards serous meningitis as a

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phenomenon apart from septic meningitis. These, to which the writer belongs, regard the increase in the cerebrospinal fluid, which we frequently see in otitic septic changes, as due to an increased activity of the secretory organs of the meninges, which is caused not by the actual presence of septic pathogenic microorganisms within the meninges, but in all probability by the toxins which are formed in an inflammatory nidus outside of the cerebrospinal canal. These toxins may be derived from an otitis media, pure and simple, as we find, for instance, in infancy and young childhood, or they may be derived from a nidus of infection which has gained access to the cranial cavity but has become entirely and safely walled off from the general cerebrospinal tract. Such a condition, minus the changes which we will later speak of in the cerebrospinal fluid, may produce all the symptoms of a septic meningitis—headache, convulsions, coma, stiff neck, Babinski, Kernig, etc. It is capable of spontaneous and rapid recovery, or recovers after pressure from the increased cerebrospinal fluid has been removed by drainage, either from the skull or the lumbar region.

The other group believes that serous meningitis is but the first stage of septic meningitis, and that if left to itself will go on to the development of general septic meningitis. It is very essential that we differentiate between these conditions because if a serous meningitis is an aseptic condition then we are not justified in operating on it in the same manner as we would if it were the first stage of a septic meningitis. For instance, we must always think that we are liable to change an aseptic condition into a septic condition, especially if we opened into the subdural spaces for drainage through the septic wound in the mastoid.

While this question has by no means been settled, one way or the other, I believe that we can to a certain extent depend on lumbar puncture for our differentiation. By lumbar puncture we obtain a specimen of cerebrospinal fluid which should be subjected to chemical, cytologic and bacteriologic examination. In serous meningitis we have an alkaline fluid, which reduces copper solutions (Fehling's solution). In septic conditions we have an absence of sugar and an acid fluid. In both we may have a fluid rich in round cells and containing polymorphonuclear cells. In both we may have microorganisms, but in the case of serous meningitis the microorganisms are dead, and in the septic meningitis they are capable of cultivation.

Treatment.—In a disease in which the mortality runs over ninety per cent the prophylaxis assumes great importance. It is not going too far to say that the large majority of cases of septic meningitis are due to neglect of pathologic processes going on in the mastoid and middle ear, both in the acute and chronic stages. An early operation in the acute cases will undoubtedly prevent extension of the inflammation to the meninges, and in a great number of chronic discharges from the ear we have abundant warning signs which indicate that the meninges are becoming irritated, such as slight headaches, recurrent attacks of pain localized to the mastoid, subfebrile temperature, and symptoms referable to the labyrinth, such as slight dizziness, nausea and vomiting. When, however, the serous or septic meningeal symptoms are in full sway, the first thing that is essential in the treatment is the evacuation of the focus within the mastoid and middle ear, and I do not hesitate to say that this is the most important part of the treatment. It is a question in my mind whether any kind of drainage of the subdural spaces has any effect on a meningitis that is septic in character and spreading. Surely, if our diagnosis is not clearly that of a septic meningitis we should refrain from opening the dura in the skull. The reduction of the cerebrospinal pressure may be accomplished as well at a distant point, namely, in the lumbar region. If, however, the diagnosis is that of a septic meningitis, we should endeavor to drain the subdural space as near as possible to the point of invasion. This may be accomplished by draining from the mastoid wound; draining outside of the mastoid wound: *a*. Through the squamous portion of the temporal bone, or *b*. through the occiptal region.

Lately our attention has been drawn to the possibilities and advantages of draining through this latter region, namely, via the cisterna magna. However, the results from this procedure have been anything but hopeful, and in a series of cases recently reported by Day, of Pittsburg, in the majority of which a post-mortem was secured, it was found that the pus was not drained from the base of the skull in draining the cisterna

magna, nor was it drained from the anterior surface of the medulla or spinal cord. In a case recently operated on by myself, in which the diagnosis antemortem of septic meningitis was complete, the cisterna was drained at a very early stage of the disease, and yet the patient steadily progressed to a fatal issue.

I am convinced that an operation of such magnitude should not be performed in cases where the diagnosis is not absolutely positive regarding the septic and extensive character of the meningitis. If there is a suspicion that the meningitis is serous or, if you will, in in the serous stage, we should refrain from opening the dura within the skull. Opponents to this view will say that the only hope we have for curing a septic meningitis is by an early operation. Against this view is opposed the dangerous probability of transforming a serous meningitis into a septic meningitis, and our inability to drain to any considerable extent the subdural spaces, even in septic meningitis, by any operation whatsoever.

22 EAST WASHINGTON ST.

ABSTRACT OF DISCUSSION

Dr. Joseph C. Beck, Chicago: Dr. Pierce brought out all the essential points in his paper, and I do not believe I have ever heard a better paper, in such a short time. The doctor brought out the fact of the necessity of the analysis of the cerebrospinal fluid. It has been shown lately that the use of chemical analysis to differentiate between serous and septic meningitis is not infallible.

Dr. Pierce also said that the bacteria found in serous meningitis are dead. I have operated on seven of these cases by drainage through the cisterna magna, with six fatalities and one recovery. The case which recovered is a questionable case of a septic meningitis, but the diagnosis of a septic meningitis was made on this fact, that the microorganisms were alive. The copper reduction was that of a septic meningitis, namely, there was no sugar reaction. This was a cure, from the standpoint of the chemical analysis and diagnosis. That case has been questioned, simply because the majority of these cases that have been operated on with a diagnosis of septic meningitis die. I have posted four of these cases, and they correspond exactly with the picture in Dr. Day's book. There is a portion of the base of the skull that is not drained at all by this operation, namely, beginning at the posterior process, and back down to the anterior portion of the foramen magnum. A solid mass of exudate is found there. Nevertheless, this is a point —that cases of septic meningitis result in death. When a diagnosis of meningitis is made, both clinically and by the cerebrospinal fluid examination, I believe that this operation should be given every opportunity, so that perhaps through these methods of operating, and, of course, subsequent post-mortem examinations would have to be made, we would come to some definite conclusions of this deadly malady.

Dr. J. Holinger, Chicago. The paper of Dr. Pierce is thoroughly apropos. We have to thresh out this question of meningitis amongst ourselves, amongst the otologists, for the simple reason that we cannot look for any support from anybody else. The neurologists have left us in the lurch. I have several times had occasion to call in neurologists in questionable conditions—several of them—and every time they have left me much more uncertain than I was before. So there is no question but what we have to rely upon ourselves. Therefore, this is the place to discuss the question of meningitis in all its phases, from the very beginning to the final operation and the post-mortem findings.

If we can make an early diagnosis then we can do a successful operation, and without that there is a question. I have taken the standpoint that the main early symptoms are headache and sleeplessness, and later stiffness of the neck. The pain in the ear and mastoid and patient is able to distinguish from the real headache due to the meninges, and these patients tell us that it is not earache, but headache that is bothering them. The sleeplessness is usually characteristic. A patient with a mastoid can be brought to sleep for hours, and may be a whole night, with some morphin or other narcotic. A patient with beginning meningeal irritation will not sleep with morphin, except in rather high doses. But still that is no rule. The changes in the pulse—slowing—I have found absent just as frequently as present. That is not characteristic.

As to the operation, I think we have to distinguish very pronouncedly between acute and chronic suppurations of the middle ear, and according to that we have to expect the spreading of the process in the different routes. In cases of suspected meningitis with acute suppuration you can expect the route through the oval or round window, labyrinth and meninges, but I do not think that the route through the semicircular canals and labyrinth is as frequent in acute infections. In acute suppuration you can expect the route through the cells, or some dehiscence in the cells of the mastoid process in different parts. You can expect the route through dehiscence in the roof of the antrum or the middle ear. In chronic suppurations the route is much more likely to be through the labyrinth and semicircular canals.

As to the question of operation, I think it depends on the route. Drainage of the cisterna magna is very often inefficient, for the reason that the meningitis does not produce a great amount of free exudate frequently, but there is the exudate in the loose connective tissue of the pia, and sometimes there is no question that you will find a great mass of free exudate. I have made post-mortems repeatedly, however, where on taking out the brain there is practically

nothing else but a few drops of slightly bloody fluid left in the base of the skull, but on the base of the brain you see, along the veins and arteries, the suppurative process in parallel streaks of pus in the meshes of tissue of the pia mater. Naturally you cannot drain such a condition through the opening of the cisterna. By such drainage you will get only the free pus in the base of the skull, but, on the other hand, I do not know of any other way by which to get drainage in such a case. Therefore, it is all-important to try and work out the very earliest symptoms that may indicate a meningitis.

Dr. Frank Allport, Chicago: I am sure we have all listened with great pleasure to Dr. Pierce's paper, which has the virtue of brevity and condenses about all we know on this subject in a few words. It is a most admirable paper.

To my mind, the most important point in this discussion, considering the almost hopeless character of the disease under discussion, is prophylaxis. By phophylaxis I mean early operation, both in acute and chronic cases. I have never seen any harm result from opening a mastoid bone in acute cases, but I have seen a great deal of harm result from not opening it. Therefore, I do not believe in waiting until dangerous symptoms are manifested. If we have a case of middle ear suppuration with suspicious symptoms, with perhaps a swollen meatus and bad differential blood count, or any symptoms at all that are strongly suspicious, I would not wait, especially if the infection is of a streptoccoccus origin. I believe that these cases should be opened early, and feel that this is the best way to avoid meningitis. The same rule can be applied to chronic, purulent otorrhoea. I believe that if a person has this disease that has resisted proper treatment for a reasonable length of time, we should advise operation and thus remove that element of danger. We should make an effort to drain them, perhaps through the squamous portion of the temporal bone, perhaps through the antrum, perhaps by the cisterna magna. When these cases become thoroughly established any effort at drainage is usually a practical impossibility.

I did not hear Dr. Pierce refer in his paper to vaccine and internal treatment of these cases. Possibly he does not believe in this form of treatment, but personally I am of the opinion that in these bad cases of purulent meningitis, incapable of drainage, we will ultimately have to depend upon the use of urotropin, vaccines, etc.

Dr. Pierce has referred to lumbar puncture, and I am firmly convinced that this is a most valuable means of diagnosis.

Dr. Carroll B. Welton, Peoria: Unfortunately, in my practice I have had three cases of meningeal complications following middle ear or mastoid conditions. These three cases all died. In no case was the mastoid opened. I am thoroughly convinced that that is the thing to do, and that Dr. Allport is right. If there are well-defined symptoms of mastoiditis, the time to operate is at once. If the symptoms are not so well-defined, I wait a few days—say a week—and then begin to find out how the case is going to go. I now believe that to avoid intracranial complications and with well-defined symptoms of involvement of the mastoid present early interference by opening the mastoid, will prevent cranial complications. If the maistoid symptoms are not so well-defined, as I said before, we can wait just a few days.

Dr. William L. Ballenger, Chicago: I was first of all impressed with the brevity and comprehensiveness of the paper. I heartily agree with every point made by the essayist. I want to emphasize the point made by Dr. Holinger, namely, that we cannot depend upon the neurologist to aid in the diagnosis. I have had a sad experience in that regard more than once. I remember one case in particular, in St. Luke's Hospital, Chicago, in which the neurologist made a diagnosis of the abscess of the cerebrum or over the tentorium—he was not sure. I thought it was meningitis and wanted to make a lumbar puncture. The other two physicians in the case objected to lumbar puncture, for what reason I have never been able to find out. They said that they thought it was foolish, and so we did not make it. Then I said to the neurologist, "Will you be present if we search for the abscess, because I don't know where to go; I have no idea of the localization; it does not seem to me that there is one." In the afternoon we operated, under the direction of the neurologist. I explored the brain over the tentorium, through the tentorium, and still no abscess. The neurologist went downstairs and reported to the family that it was a case of abscess, but we were unable to find it, and that it was not meningitis. About the time he was saying that I again suggested lumbar puncture, which was made, and the fluid found loaded with bacteria and other products. It was a case of meningitis, without any doubt. The patient died in the course of a few days, and thus ended the story.

The points of the paper, it seems to me, drifted toward the idea that our hope in these cases is in an early diagnosis, and that is what we are coming to in the study of these cases, fortunately, by lumbar puncture and by other signs—our knowledge of labyrinthine diseases; our knowledge of routes of infection, and by especially being very suspicious on having this peculiar severe headache which comes in cases of meningitis.

I can hardly conceive—perhaps my knowledge of the subject is too poor to enable me to—that a serous meningitis is not a septic meningitis. It seems to me that they are both septic. Adami says that there are just two causes of inflammation. One is infection and the other is trauma, and I cannot see how we can have a serous meningitis without infection, if Adami's view is correct.

Dr. Harry Kahn, Chicago: I am pleased to hear Dr. Pierce's paper, and I wish to call attention to one

point, namely the bacterial flora which causes the otitis media.

I believe the bacteriologist can sometimes be of greater aid to the otologist than the neurologist.

A case in point: A few days ago I was called to see a patient who had been suffering for a couple of months with a one-sided headache and pain in the ear. The case had been diagnosed as a migraine but did not yield to treatment as such. Other neurologic and medical symptoms were absent. There was a distinct pain back of the ear with slight edema about the mastoid region. Temperature was 99.6. I incised the drumhead, and there immediately poured forth a large quantity of pus, which the bacteriologist found to be a pure culture of pneumococcus.

Later the mastoid was opened and showed complete destruction of the mastoid process and back into the occipital bone.

The whole area was necrosed, exposing the brain, and showing a meningitis with some granulations over the sinus. The patient some days later had a chill and developed a temperature of 103. I then opened the sinus and found pus.

The conclusion to be drawn from the foregoing is that the pneumococcus causes an inflammation that subsides, and then there is a sudden explosive exacerbation meninigitis sinus thrombosis, and great bone destruction.

The micrococcus mucosus capsilatus should also be kept in mind. If either of these organisms are found we should be on our guard.

A bacteriologic examination ought to be made in every case of acute otitis media purulenta, and the prognosis of the case can usually be given by the result of these findings.

Dr. J. R. Fletcher, Chicago: In view of the great fatality which Dr. Pierce has mentioned—ninety per cent or more, it behooves us to do something at least which will reduce the death rate. The death rate in Dr. Beck's six cases with one recovery is certainly better than ninety per cent. I think the essential feature should be brought out in the operations we are speaking about. We refer especially to the labyrinth operation—not alone to opening of the mastoid. But if the labyrinth is the point of entry, then the labyrinth must be opened. But to open the labyrinth imperfectly is worse than not to open it at all. When the promontory alone has been removed, the trauma which we add to the infection increases the death rate, but when the semicircular canals are all opened together with the vestibule of the promontory, the death rate is not so great. When we go back to the internal meatus the death rate is still lower.

I agree with what Dr. Allport has said regarding early operation, but would like to qualify it by saying that in young children, in whom we have so many of these cases from acute attacks, we can delay long enough to see what a paracentesis will do. After meningeal symptoms are very distinct, we have seen them disappear very quickly with simple opening of the ear drum.

So far as the early symptoms are concerned, mentioned by Dr. Holinger, I think that is admirable, but I think we ought to be a little more definite about the localization of the headache, etc. We know that we can outline it just behind and above the ear and have the pain project forward. I think it was Ruttin who first called attention to the mucosa capsulatus causing the majority of cases of meningitis. In that connection it might be well to say that when we find the mucosa capsulatus it is just as well to operate before we get the symptoms, because in nearly every case in which that organism is present the condition will go on to a meningitis.

Among the other symptoms is nystagmus, with its accompanying series of vertigo, nausea and vomiting. We ought to look for it very early. If we look for it with the eyes distinctly directed to first one side and then the other, as we can in small children by attracting their attention with bright objects, and if we then look very closely, we often find the nystagmus where we thought there was none, and that has been the error in the older authors when they said there was absence of nystagmus, when, in the light of our present knowledge, it was not possible that nystagmus was absent.

Dr. Joseph C. Beck, Chicago: I would like to have Dr. Fletcher repeat what he said, so that perhaps the reader of the paper can answer that point.

Dr. Fletcher said that every case of streptococcus capsulatus was due to meningitis. That is not my experience. Does he still insist on that fact, because in the examination of ears, where you find that organism, you would give an immediate prognosis that it would be a meningitis.

Dr. John R. Fletcher, Chicago: I meant to say that those cases showing any meningeal symptoms should be operated on at once.

Dr. J. Sheldon Clark, Freeport: I was very much interested in Dr. Pierce's paper.

The principal thing in these cases is to make an early diagnosis. A late diagnosis in these cases, to my mind, is worth nothing. During the last eight years I have had five cases, with one recovery. Three of these cases followed mastoid infection, and one from typhoid infection. The other one was rather obscure.

One point in regard to lumbar puncture. In the last case I had, one following an attack of measles with mastoid infection, I did a lumbar puncture and we got a purulent fluid. Examination showed the meningococcus present, found all without the cells. I think that is a point in prognosis to look for. The fact that the cocci are without the cells is of interest in these cases. In three fatal cases observed recently by Dr. N. R. Harlan of Freeport the cocci were all extra cellular from the beginning, whereas in one case, where recovery took place, the cocci were early found intracellular. In my case, after

withdrawing thirty cc. of fluid, we got a collapse of the patient, and it was necessary to perform artificial respiration. This man also had stimulants. Once in a while lumbar puncture will cause the patient to sink very rapidly, and one should be prepared for such an emergency.

Dr. Pierce (closing the discussion): I thank the gentlemen very much for their kindly reception of this paper.

In regard to Dr. Allport's recommendation regarding the necessity of depending on serum and vaccine, I heartily agree with him, but not in the present state of vaccine and serum therapy. There is no of meningitis, after the inflammation is once thoroughly established in the pia, is in serum therapy or vaccine therapy, but this has not been developed to the point of effectiveness as yet.

In regard to lumbar puncture in diagnosis: Our knowledge of meningitis from beginning to end, our knowlede of the anatomy of the meninges, of the cerebrospinal fluid, is pitiably fragmentary. We really know very little about the anatomy of the subdural spaces. We know very little about the circulation of the cerebrospinal fluid—how it comes or where it goes. Why is it, for instance, that coloring matter, injected into one portion of the cerebrospinal spaces will take a certain course, coloring a certain portion and not coloring another? It remains for the future to clear up much that is dark as regards our knowledge of the meninges. It is a most profitable field of research.

But, nothwithstanding all that, we still must say at the present time that for diagnostic purposes lumbar puncture is the most dependable measure that we have.

I agree with Dr. Ballenger that neurologists often confuse more than aid us. We have to depend upon ourselves, and we must prepare ourselves more and more to handle these cases personally, and not depend upon an array of consultants.

I do not say that serous meningitis is not inflammatory in its nature. Serous meningitis is caused by toxins of pathogenic bacteria but not by the bacteria themselves. The toxins gain access to the cerebrospinal cavity and thus stimulate the secretory organs of the meninges. That is my opinion at the present time.

OPERATIVE TREATMENT OF FRACTURES WITH CONTRACTURE OF THE ATTACHED MUSCLES.*

P. B. MAGNUSON, M. D.
CHICAGO, ILL.

The question of when to operate on fractures has been the subject of much discussion. The rules laid down by authorities heretofore have been never to operate on a fracture immediately after its occurrence, the reasons being: 1. That the tissues are traumatized by the violence of the causative factors, giving rise to stagnation of blood and a decreased resistance of the parts. 2. There is considerable hemorrhage resulting in a blood clot around the broken ends of the fragments. It probably as a general rule is best to follow the precedent laid down by these authorities. However, the fact remains that if there are no bacteria introduced into the wound by the operator, there is no reason why we should get infections in the early cases any more than in the late ones. In comparing the results of the two methods, that is, operating on fractures at sight when it is necessary to operate on them to hold the fragments in position, and operating on them a week to two weeks after the injury, I can find no material difference in the result.

I believe that the preparation for operation in these cases is one of the most important factors in the technic. All cases of fracture are due to violence, either direct or indirect. There is usually some damage to the soft parts at or near the seat of fracture. The skin is dirty, from a surgical standpoint, and with one scrubbing it is impossible to clean these cases up in a satisfactory manner. It has been my custom in all cases to thoroughly scrub the parts surrounding the point of attack or fracture for at least a foot and a half in all directions, not neglecting to see that the limb is scrubbed as thoroughly underneath as it is above, and that the scrubbing extends well on each side of the fracture. This is done with a brush and green soap, sometimes once and sometimes twice before the operation. The limb is then washed off with alcohol and ether and wrapped in sterile dressings, until the patient is brought to the operating-room, when the dressings are removed, the patient's limb again thoroughly shaved and scrubbed, and again washed with alcohol and ether. It is necessary for the operator himself to look after these details, unless he is fortunate enough to have with him an assistant whom he can depend upon at all times. The ordinary hospital interne does not appreciate the necessity of a wide field, which is perfectly sterile.

As a typical example of the class of work under discussion, let us take a fracture of the

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femur, since this bone has larger muscles than any other and is probably the hardest bone in the body to handle, from a surgical standpoint. The armamentarium of a surgeon who is doing bone work should be complete, for the handling of bones cannot be successfully done with the hands. It requires special instruments.

In the case of a fracture with contracture of the muscles, as practically always occurs in femur cases, there should be some sort of ap-

Fig. 1—The Extension Applied

paratus to stretch the muscles, and bring the fragments into apposition without too much manipulation inside the wound. In my work I have used a very simple and inexpensive apparatus consisting of a rod which is clamped on to the end of the table and holds a pulley at some distance from the table. This rod is supported by a standard set upon the floor. Before the patient is brought into the operating room a loop of ticking is thrown around the knee, gripping above the patella, running under the knee and around the leg, and tied in a knot above the crest of the tibia. This gives a firm grip on the thigh, without any traumatism to blood-vessels or nerves which pass under the knee joint. From this loop of ticking a rope is run over a pulley at the foot of the table and to this rope window weights are attached. By this method we get a steady strong pull on the muscles, while the incision is being made, providing there are no adhesions between the fragments, as in a fresh case, and by the time the incision is made and the ends of the fragments exposed, they are pulled into line by the weights and very little manipulation inside the wound is necessary.

In the old cases with contracture of the muscles and adhesions between the fragments, either fibrous or bony, I attach only about twenty pounds of weight to the rope until after the incision is made and the adhesions freed. After the adhesions are freed window weights are attached to the rope until the muscles are seen to stretch rapidly enough to suit the operator's convenience. I use from fifty-five to a hundred pounds of weight on a femur of a full grown man, the reports of which cases I will give in detail later in this discussion. It has been my custom to protect the wound from contamination by covering the skin with towels and fastening the edge of the towel inside the edge of the wound either by safety pins or Moynihan forceps. If we could be absolutely certain that we would not forget ourselves and handle the skin in the course of the operation, I believe that this would be an unnecessary step, but when operating with assistants it is practically impossible to keep everybody's hands off the skin, and it probably makes it easier if we make our wound fool-proof.

After going through the muscles and exposing the bone well above and below the seat of fracture, the ends of the fragments are observed usually in very close apposition. The only manipulation necessary usually is to rotate the fragments so they bear the proper relation to one another. For this work the handiest instrument of which I know is a heavy Lane forceps. The fragments being in apposition, it is sometimes a very simple and sometimes a very difficult matter to hold them there until the retention apparatus, whatever it may be, is applied. I have never found it necessary in any fracture, however, to cut the bones in any way, either to assist in holding the fragments or because the ends could not be brought into proper apposition. An assistant at the foot of the table manipulating the lower fragment as directed, while the weights are still on, is usually able to bring the bone into perfect line, after which it can be held very nicely by the use of a Lohman clamp.

There are many forms of apparatus on the market for stretching muscles, most of them very expensive. The best of these probably is Ridlon's apparatus, which consists of a heart-shaped plate on which the sacrum rests, at one end of which are two steel rods, as counter extension against the perineum. This plate can be raised and lowered by a crank under the table, so that after any operation is complete a plaster spica of the hip may be applied without moving the pa-

tient. From one end of this plate extends a long steel rod on a ball and socket joint. At the far end of the rod is a ratchet. To this ratchet is run a strap which is wound around the foot. As the ratchet is tightened up, the strap pulls on the foot and the rods in the perineum give counter-extension. This is a very efficient stretching apparatus, since the leg can be moved freely in all directions and there is no limit to the pull which one can make by tightening up on the screw. A hip can be pulled out of the socket with this without any exertion on the part of the operator. In cases of fracture of the neck of the femur a perfect apposition can be had in about a minute or two, and the apposition can be maintained until the fracture is nailed. It is not necessary, however, to carry with one a stretching apparatus when Nature has provided a powerful lever if the fragments themselves are used against each other. Given a case with two inches of shortening in the femur, if the fragments are freed and projected through the wound at an angle, the ends being brought together, a notch cut in one fragment and a corresponding point on the other, the leg can be pried back into shape and the muscles stretched as easily as in any other way. The objection I have to this method, however, is that there is considerable confusion, dragging around of the patient on the table, in mussing up of dressings, and the manipulations sometimes must be repeated a number of times before the fragments are brought end to end in a manner to suit the operator. There is distinct advantage in the stretching apparatus over this method, in that there is no confusion, there is no manipulation of the bone inside the wound, and there is less likelihood of an infection.

The problem of holding the fragments in place has received much consideration of late. The most common method probably is the use of the Lane plate. It is a well-known fact, however, that tissues often rebel at holding foreign bodies, and this is true of Lane plates in a large majority of cases, notwithstanding the general impression that if the plate is properly put in it will stay in indefinitely. In conversation with surgeons of world-wide reputation I have almost invariably heard them say, when discussing the subject, that about eight out of ten plates eventually come out. It is, therefore, advisable for us to find some method of holding bone fragments without putting in a non-absorbable material. While working on experimental work at the University of Pennsylvania some years ago, the problem being "Lengthening Shortened Bones of the Leg," I found the only means of holding the fragments in apposition without some necrosis or softening of the bone was by the use of ivory. Ivory is an animal matter and is eventually absorbed by the bone, the bone growing in as the ivory is absorbed and maintaining at all times a close apposition without necrosis of the parts involved. The process of absorption is more or less of a mystery, although a few osteoclasts could be found surrounding the ivory at various points. The fact remains, however, that ivory screws nearly the size of a lead pencil were entirely absorbed, so that they could not be found with the microscope in three months. In view of this fact, it has been my object to develop a method of holding bone fragments in close apposition without using a material which had subsequently to be removed. I believe that ivory answers all purposes, it being strong enough to hold any pull exerted upon it by the muscles, maintaining its hold on the bone closely and causing no necrosis or softening around it, and, finally, being absorbed by the tissues.

In oblique fractures which must be operated on it is my custom to use an ivory screw or, if necessary, two screws, first drilling a hole the diameter of the screw at the base of the threads, after which a tap, such as mechanics use for cutting threads on the inside of nuts, is put through this hole and a thread cut the same size as that on the screw. The screw is then inserted, which needs no force, and cut off flush with the cortex of the bone at both sides. The absorption of fluids by the ivory expands it enough so that in twenty-four hours there is no play between the fragments whatsoever.

This method, of course, is applicable only to oblique fractures. In transverse fractures an ivory plate is used, a slot being cut in the bone the exact width of the plate, and the plate driven into this slot so that one edge rests against the cortex opposite the slot of entrance. (See Fig. 2, A. B and C.) This plate is held firmly in place by ivory pegs driven through it on each side of the fracture. (See Fig. 2, D and E.) So far this method has been very satisfactory. I have been forced to take one of these plates out in a

fracture which became infected on account of a slough occurring where the tissues were traumatized at the time of the accident. The plate was in six weeks and showed very marked erosion on both sides. The ivory pegs which held it were half eaten away.

This method, of course, is still in the experimental stage, but whether it results favorably or not, I believe we should persist in trying to find a method of holding fragments of bone without introducing foreign matter or, rather, non-absorbable matter into bones.

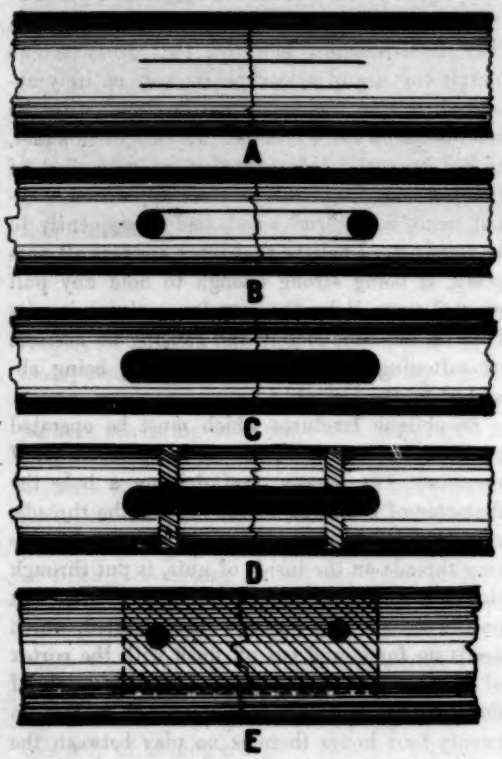

Fig. 2—The Ivory Plates

The question of after-treatment of these fractures is very important. We have all operated on fractures, had the patient leave the operating table with a splendid position and in six weeks, to our surprise, have found quite a marked deformity. I know this has been my experience and the experience of a number of others. I believe that there is no retention apparatus applied directly to the bone which will hold against the steady pull of the great muscles of the femur.

It is my custom to apply a cast to all fractures operated on and reenforce it with a Buck's extension. This does two things: It holds the bone in line, preventing deformities; it also relieves the pressure on the ends of the fragments, and prevents necrosis, which is inevitably followed by shortening.

In conclusion, I would say: Operate on fractures at sight if they must be operated on, providing, first, that you are able to control the technic; second, that you have the proper instruments, third, that there is no pus present; fourth, if there is contracture of the muscles that there be at hand the proper apparatus to stretch these muscles so that the fragments may be brought into apposition accurately without sawing off or chiseling off the ends of the fragments; fifth, that a cast and extension is much preferable to a cast without extension, or an extension without a cast.

ABSTRACT OF DISCUSSION

Dr. Samuel C. Plummer, Chicago: In regard to the length of time after the injury we should operate it seems to me the general tendency is to delay a while, usually a period of from seven to ten days, until some of the immediate effects of the traumatism have passed away and until the circulation at the site of the injury is somewhat restored. We never can be sure of absolute asepsis.

In regard to using alcohol or, what is simply reinforced alcohol, tincture of iodine, for the last cleansing before operation, there is one point to be borne in mind, and that is that alcohol cleansing is much more efficient if no water has been applied to the skin surface within a period of a few hours.

In regard to the method of extension in cases of fracture, as shown by Dr. Magnuson, the extension being made by heavy weight, I wish to say that I have had some experience in that line, and I am in accord with him as to the efficacy of it. The heavy weight continued does extend where ordinary methods of other sorts do not. Even though you have strong assistants, they cannot keep up a continuous traction of 50 or 150 pounds the way this extension apparatus can. It is efficient in overcoming the contraction of the muscles. It can be used on the lower extremity, as has been shown, and it can also be used on the upper extremity. As an example of this, I had one patient with a transverse fracture of the lower end of the humerus; it seemed impossible to get this fracture in line; to get the two fragments into apposition by any ordinary means, and finally with the patient asleep and the forearm flexed at a right angle, a broad band was put around the forearm close to the elbow and the extension apparatus was used with a weight of about fifty pounds left on. After half an hour's manipulation of the fragments it came down in good apposition. Without that

nothing short of an open operation would have sufficed.

Dr. W. F. Grinstead, Cairo: I believe it will be interesting to the society to know of the method that is now being employed by Dr. Howard Lilienthal of New York City in using the Lane plates in these different fractures. It was reported by the essayist that in the service of Dr. Ridlon and Dr. Beck it was necessary to remove the plate in eight out of ten cases. Dr. Lilienthal, who holds clinics at Bellevue Hospital and also at Mt. Sinai Hospital, says that many of our plates are removed by other surgeons and we do not hear of it; that the patients, instead of coming back to us, report their difficulties to others.

Dr. Lilienthal is a man who does his own thinking. He is original, as many of you know, in his methods. I visited his clinic about three weeks ago and I found he was using screws that projected some distance beyond the skin with a view of removing the plate. The plates were not supposed to remain. He is having these screws made by Tiemann & Co. of New York, and at the end of the plate he attaches a small silver wire cable, this little cable being made of four strands of size 34 silver wire. These cables, he says, do not break so readily as the single strand of wire. At the end of the plate he makes a little hole which does not interfere with it, puts the wire through and brings it out at the end of the incision. He leaves the plate about three weeks. With a small screwdriver he withdraws the screws, then he pulls the wire at the end of his incision without an anesthetic and draws out the plate. It does not hurt the patient, he says. I saw him remove one from a patient and the patient did not wince while he was doing it, and he pulled the plate out through the end of the incision. This should be done at the end of three weeks. By that time nature has made sufficient union that the bone can be held by ordinary means.

Dr. Carl Beck, Chicago: Dr. Magnuson's paper on the use of ivory pegs marks certainly advance in the operative treatment of fractures. There is no doubt that there are a number of cases in the practice of every surgeon in which the plates have to be removed, and it seems that while the Lane plate is used extensively with very good results in a number of cases, still, the plates cause a great deal of damage in producing osteomyelitis. There is a necrotic process following which extends to the size of the screw, and if you examine the bone afterwards, particularly when the asepsis has not been perfect, there is in both cases a serous, if not a purulent, discharge. On account of this a great many of these cases afterwards are the subject of secondary operation for removal of the plates. The beautiful result, as shown in the case of bad fracture of the forearm, shows it can be used with good effect in the same way and it is absorbable material. We have gone through the same experience with the anastomosis button, afterwards with the absorbable button, and later on, without any button. We may all get to some method by which we get union, but the use of ivory marks an advance in the method of treatment.

Dr. Daniel N. Eisendrath, Chicago: I have been very much interested in Dr. Magnuson's paper and with reference to the method of disinfection my own experience has been that iodine is a safe method of disinfection. I believe in washing up the patient the night before operation, and then on the following morning, just before the operation is performed, I apply 50 per cent solution of tincture of iodine; in other words, 3½ per cent tincture of iodine.

In regard to the main subject of the paper the subject of ununited fractures I believe there can be a difference of opinion, and the more experience I have in reference to this subject the more my tendencies are towards conservatism. I do not believe we ought to call a fracture ununited at the end of four or five or six weeks. A great many of these cases have been primarily maltreated in that the fragments were not properly fixed or adjusted in the beginning.

There are two main principles in the treatment of fractures and those are, in the first place, absolute fixation in the corrected position, and, second, the absolute prevention of motion at the point of fracture.

My own views in regard to the Lane plate have changed considerably. I saw a great many cases of fracture operated on at the county hospital, where they would take an hour and a half to try and reduce a fracture and then expect a fracture after that amount of manipulation and possible infection to heal by primary intention. The secret of why I have changed my views and have had better success with the Lane plate in the past year and a half than in the previous two years is that my period of time has been reduced to a minimum. Seldom, if ever, is it over fifteen to twenty minutes. We have all our apparatus right at hand and as Dr. Magnuson has said, no man ought to operate on fractures without a perfect armamentarium for that purpose.

Dr. Jacob Frank, Chicago: It is not as easy as the reader of the paper would give us to understand to use this apparatus or any other kind of apparatus for the purpose of reducing an old fracture. With its use there have been failures and I have seen failures in other cities. I saw a failure in Philadelphia where Dr. Magnuson made his experiments. It is quite different when we come to use this apparatus in a recent fracture, but in a fracture that is ancient and where the displacement amounts to two or three inches, especially in the arm, there is not an apparatus constructed that can pull it down without danger to the life of the patient. I saw Dr. Martin of Philadelphia use an apparatus similar to the one that has been described and I believe this one is copied after that of Dr. Martin.

Dr. Magnuson: No, sir; this was made before Dr. Martin's.

Dr. Frank: I saw Dr. Martin fail in reducing a fracture of the humerus where he worked for three-quarters of an hour, finally gave it up and had to resect the bone.

It is more difficult to reduce a fracture of the humerus than it is a fracture of the femur. No matter how ancient a fracture of the femur is, if you clean the bones up, bring them out from the wound and refreshen the ends, they can be brought together. You cannot do this in a fracture of the humerus. It is an utter impossibility to do so.

Dr. William E. Schroeder, Chicago: I do not suppose there is any man in this audience who can say more about Dr. Magnuson's work and method than I can. I have seen the doctor operate on each and every case. I have had a good deal of experience with the Lane plate, and have come to believe that Mr. Lane himself will ultimately have to abandon the plate, for the reason that it is a metallic foreign substance which gives trouble ultimately in the majority of instances. I have seen Dr. Magnuson's work in the use of the ivory, which is absorbable material. It absorbs slowly and gives no trouble, and I think with Dr. Beck that the introduction of ivory into bone work is a distinct step forward and I wish him much success.

As a matter of technic it requires no small amount of skill to know where to keep your hands and when to keep them off from using the apparatus for the application of the ivory plates, and that technic I fully appreciate the doctor has acquired.

Dr. C. B. Brown, Sycamore: I have been very much interested in this discussion and wish to say that there will be no Lane plates taken out by me, because I have had no experience with them. I have some in my office.

Dr. Eisendrath has well said that we must reduce and we must retain the fracture. With all due respect to the Lane plate and the ivory plate, what have become of those people who thirty-five and forty years ago had broken femurs and broken arms. They are not going about crippled and deformed. They had no Lane plates applied and no ivory plates. I have seen lots of them with broken femurs who have made excellent recoveries without any such apparatus as this.

With reference to ununited fractures I once asked Dr. Moore of Rochester, N. Y., who was an old and experienced surgeon, in regard to a case of what I thought was ununited fracture which was taxing me to the utmost. He said to me: "My dear young fellow, I have seen a great many cases of delayed union, but very few cases of ununited fracture."

Dr. John Ridlon, Chicago: Some of you will continue to use the Lane plate for quite a time. Some of you may have the misfortune to have your wounds following operation suppurate. Do not be alarmed at that. Do not take out the Lane plate until you get union, because you will get just as good union with your suppuration by leaving the Lane plate with the limb in a plaster cast eight weeks, maybe longer; then when you have union, take out the Lane plate.

THE TREATMENT OF TRACHOMA WITH SPECIAL REFERENCE TO EXPRESSION AND FRICTION WITH THE AUTHOR'S GROUND GLASS ROD

C. G. Darling, M. D.
CHICAGO

In the treatment of an infectious disease such as trachoma, much stress should of course be laid on prophylaxis and the disease be treated as nearly as possible like a contagious one, this being especially true if a discharge be present.

The patient should, of course, sleep alone, the bedding (particularly the pillow cases) and all of his laundry be kept separate from that of others, and he should have towels, napkins, washcloths, wash basin, etc., for his private use.

It is necessary for the physician treating a case of trachoma to make the patient understand why he has to be so careful, as one is apt not to spend

the required time to fully impress the importance of prophylaxis on the patient's mind when seeing many cases in dispensary practice.

A great step would be taken in the prevention of this as well as other serious diseases if all public wash rooms (clubs, schools, hotels, etc.), were compelled by law to install flowing basins, the water being controlled by foot pressure, there being of course no stoppers for the basins. Further, there should be no such thing in a public wash room as a roller towel, paper or individual ones being required.

The basic rule in treating disease of the conjunctiva is to keep the eye free of all discharge. This can usually be accomplished by the patient, frequently flushing out the conjunctival sac with a normal salt solution, boric acid, or 1/10,000 bichlorid solution. If the trachoma is an acute one, some preparation of silver should be used to control the discharge, the lids may be painted daily with a one per cent silver nitrate solution, and the excess washed away or neutralized. In place of silver nitrate, protargal, five per cent, or

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argyrol twenty-five per cent, may be dropped in the conjunctival sac or brushed on the conjunctiva.

Cold applications frequently applied are of service at the time, and I might also state that it is a great mistake to use a bandage when a discharge is present, as free drainage is thereby interfered with.

Innumerable drugs have been recommended for use when the trachoma is not an acute one, copper in some form being one of the oldest as well as the one most advised. Copper sulphate crystal, aqueous solution of copper or a ten per cent solution in glycerine, citrate of copper, etc., these being dropped into the eye or rubbed into the conjunctiva and are used for their stimulating effect on the conjunctiva as well as for their antiseptic value.

Tannin in boroglycerine and yellow oxide ointment are also highly recommended.

The best results in the treatment of non-acute trachoma are obtained by the use of some of the mechanical or surgical methods. Probably the most ancient procedure was the rubbing or scraping the trachomatous conjunctiva with fig leaves or pieces of stone or wood. This method is named by the French grattage and numerous instruments have been devised such as files, rasps, curretts and wire brushes, among them the trachomatome of Jameson,[1] and of late, the sandpaper treatment of Coover[2] in which the lids are everted and smoothed down with strips of 0 or 00 sterilized sandpaper, this method having given excellent results, and Coover believes it to be better than the use of boric powder previously used by him.

Pressure has also long been used to express the contents of trachomatous follicles, the thumb nail being one of the first instruments employed. This was advised in this country by Hotz in 1886,[3] and a little later the instruments of Hotz, Prince (presented before this society in 1889), and Noyes[4] appeared to be followed by Knapp's[5] roller forceps in 1891. Expression by means of one of these instruments undoubtedly hastens the cure of trachoma.

I believe the expressors of Kuhnt[6] which consists of two perforated blades (or one perforated and one plain blade) causes less trauma and traction than any of the others, as the blades are simply pressed together. They also have an advantage in that they can be used without everting the lids. Expression is most successful when the follicles have commenced to show softening at the beginning of the second stage of the disease (when they are ripe, in other words). Expression with forceps is contraindicated in acute trachoma, during exacerbations and in the last stage.

Massage has also proved of great benefit in treatment of trachoma and can be used in all stages of the disease. It can be made with the fingers, cotton swab, smooth glass rod, glass balls,[7] ground glass rod, etc., without the use of other remedies or the swab or rod can be moistened and covered with boric acid powder, iodoform, calomel, aristol or the solutions of bichlorid 1/250 to 1/3,000, argyrol, protargol, yellow oxide ointment, brown ointment or other drugs, and it is probably the massage and expression that accomplishes a large part of the good that is done even when massage is combined with the use of some drug.

The ground glass rod which I have had made by F. A. Hardy & Co., I believe offers some advantage over the plain glass rods and balls which have for the past few years given most excellent results in the treatment of all stages of trachoma. This rod is ground on one side only, the smooth side being introduced next the cornea. The rod, because of its slightly roughened surface, will "pick up" a solution or powder better, and for the same reason will smooth out the conjunctiva better than a plain rod or ball. It also has a ground glass ball at the end of the handle that can be used to massage the lids when they are everted.

Before using the rod the eyes are flushed out with a boric or 1/10,000 bichlorid solution to get a good mechanical cleansing of the conjunctival sac. If a vigorous massage is to be given or the patient is very sensitive a 2 per cent cocaine solution in adrenalin is instilled, although after a few treatments a rather severe treatment is well borne without anesthesia.

The upper lid is drawn down and away from the eye and the rod is introduced well up into the retrotarsal fold, the smooth side next the cornea, the rod is used without any medicament or is dipped in the solution or ointment to be used or, what I prefer, moistened and dipped in one of the powders mentioned, before introducing it behind the lid.

The lid is pressed against the rod by the thumb

of one hand and the rod moved back and forth over the inner surface of the lid and retrotarsal fold with the other; the lid is also stretched a little at the same time by pulling the rod forward.

The lower lids are treated in the same manner, only the lower lid is drawn up when the rod is introduced. This treatment may be applied every day at first, and later less frequently. If all the follicles are not expressed after a few treatments, they can be opened with a needle or knife point before massaging the lid.

The plain glass rod has given such excellent results by mechanically stimulating the conjunctiva and thus hastening the absorption and reduction of the follicles, and thinning and smoothing out the lids, that I believe the ground glass rod with its advantages, has a place in the treatment of this disease.

The pressure between the lid and thumb can be made as strong as you wish, and the tarsus as well as the deeper layers of thickened conjunctiva can be reached by the treatment.

The rod can be used in connection with any other treatment, after expression with forceps, and in all stages of the disease, even in the acute form, to better apply argyrol or other drug. Of course at this time vigorous massage should not be used.

Other forms of treatment which I will only mention are electrolysis following scarification which Lindsay Johnson[8] after twenty-five years still believes to be the best treatment.

Treatment with radium or x-rays has been reported by some to give good results. Jequirity is recommended again every now and then for old trachoma with pannus, but it seems to me to be somewhat severe, as is also the inoculation with the gonococcus.

Excision of a strip of infiltrated fornix alone or combined with excision of the tarsus is considered by many to be an operation for the last stages of the disease when it is too late for other methods of treatment or the other methods have failed.

There are the necessary operations for the sequellae of trachoma such as canthotomy and entropium operations; also peritomy for pannus, etc., of which I will not speak.

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122 S. Michigan Boul.

A LITANY FOR DOCTORS.

From too few patients and from too many patients; from hypodermic syringes that won't work; from book agents; from consultants who steal our cases; from rheumatism; from collecting agencies; from stupid nurses; from people who are going to pay for visit next Saturday night; from antikamia calendars; from tire troubles and Christian Scientists—good Lord deliver us.

From the people who begin their letters to us, "Dear Sir"; from static machines in damp weather; from boils on the back of the neck; from debts and detail men; from Pa-pa-yans Bell blotters; from anti-vivesectionists; from nurses who know more than we do; from "cures" for tuberculosis; from "textbook" papers, from incurable cases of imaginary disease; from Bernard McFaddists; from tag days; from new methods of administering salvarsan; from "automobile" fractures; from infant foods; from anti-vaccinationists; from nature curers; from Immanuel Movers and the treponema pallida—good Lord deliver us.

From the people who call us "Doc"; from malpractice suits and deadbeats; from gossips; from overly-grateful female patients; from pretty nurses and jealous wives; from the doctor who succeeds in a case; from the "wrong number" mistake; from consultations by telephone; from the counter-prescribing druggist; from lawyers and dentists; from samples of Sal Hepatica; from the man who wants us to help his lady friend out of trouble; from calls at 2 a. m.; from shoulder presentations; from optometrists and engine trouble; from the man who "cannot add anything to the paper, but merely wants to compliment the essayist"; from meta-amidopenylparamethoxychinolin; from New Thoughters and mining stocks; from breaking catgut; from neurasthenics; from "the sponge we left behind us," and from the dangers of tricresol 0.4 per cent.—good Lord deliver us. Amen.

—*From the Lancet Clinic.*

From the surgeon, whether of class or "group" A, B, C, or X, who removes a normal appendix through an incision for nephorraphy:

From Ohrspeicheldruesenentzuendung:

And from Phenyldimethylpyrazolonamidemethansulphonsaures natrium.

Good Lord, deliver us.

ILLINOIS MEDICAL JOURNAL

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DECEMBER, 1913

Editorials

THE AMERICAN COLLEGE OF SURGEONS.

Medical circles throughout the middle west have been recently agitated by the formation of an association known as the "American College of Surgeons," whose avowed object is to regulate the practice of Surgery (sic) and to elevate the same. A consideration of the relations of this body to the medical profession, as far as they are apparent at the present time, will be of interest.

"A" The American College of Surgeons was incorporated at Springfield, Ill., Nov. 25, 1912. The object for which this association was formed as stated in its charter is "To establish a standard with minimum requirements for the practice of surgery by graduates of medicine, and to devise methods of ascertaining who meet these requirements, and to confer upon such persons a fellowship in this association."

This association, then, is composed of a body of men selected, for various reasons, by individuals in different parts of this country and Canada who were authorized by the incorporators of the association to act as mentors for their particular territory. The only qualification necessary seems to have been surgical tendencies, in some cases exceedingly remote, and sympathy with the purpose of the organization, which in some instances at least appears to be due to a fear of wrath to come, as the board of regents will be under the domination of the incorporators and the latter are responsible to nobody.

In England the society after which the American College of Surgeons is patterned is the outgrowth of centuries of association with privileged classes in social and political life, and governmental affairs, a situation which has no counterpart in American life and institutions, and which is contrary to the spirit of American Medicine. As far as the relations of such a body to the welfare of the medical profession is concerned the Royal College has never accomplished anything for the mass of British practitioners which would entitle it to special distinction, except to favor the aggrandizement of the few at the expense of the many.

One of the objects of the C. of S. as specified in its charter, and apparently the chief one, is to determine *who shall practice* surgery. To the unprejudiced mind it would appear that in consideration of the authority vested in the university diploma, and that legally applying to State license to practice medicine, the assumption of this duty by a self constituted, unauthorized association is somewhat anomalous. The intention of this association to go to the various State legislatures and have the laws so amended as to relegate to them, or some other body, licensing power restricting the practice of surgery to those who have had special training and experience, is impracticable because in the general practice of medicine the line between medicine and surgery cannot be so definitely drawn and the restrictions placed on the country doctor would be such as to render him practically useless to his community. In the matter of restricting the practice of special surgery to the elect there appear the objections of definite division of field, emergencies, and above all, the fact that such a course would not conserve the public welfare as completely as claimed.

Better surgical work is undoubtedly needed. It would be a sad day for medicine if this were not generally recognized; but to fling hcarges of "legalized murder" and accuse the man who is "nothing more" than a physician with at-

tempting to practice surgery appears rather strange coming from those whose beginning in surgical fields was and is today marked by trails that were not outlined in medical publications. Perfection of technic is essential to the surgeons, but it does not make the surgeon. In the absence of pathological knowledge and prognostic skill and good judgment the so-called surgeon is a greater menace to the public than the tyro in surgery. Likewise the physician who is entitled to the appellation has too much sense to attempt surgical work for which he has not been trained, while the one who lacks sense is a covert and even a greater menace than the ill-equipped surgeon. Medical standards have advanced more rapidly in the past fifteen years than during any period of fifty years in the history of medicine. We need further advances, but they should come through the various State boards of health and should be furthered by appropriate committees of the American Medical Association, the State societies and their constituent bodies.

We do not believe the assumption of these reforms by a self constituted body of medical men is advisable, especially when such organization is so palpably open to the charge of self advancement of its members that even the laymen are asking "What are you going to do about it?" Reasonable objection to the formation of a surgical oligarchy can not be made provided such an organization does not advertise itself in a manner offensive to the medical profession. We would all admire (their "gall") but do not care to wear the collar of their authority.

THE APPELLATE COURT DECISION

In our November issue we published the major part of the decision of the Appellate Court, entitled "The People, *ex rel.*, G. Frank Lydston, appellant, *vs.* John E. Wayman, state's attorney, appellee," a case very materially affecting the legal status of the American Medical Association.

In the *Journal*, November 22, there is an editorial and also an article signed by the chairman and secretary of the board of trustees, both articles entitled "The Alleged Decision Against the American Medical Association."

We have no fight with the American Medical Association—in fact, we think that every member of the American Medical Association owns a small portion, jointly with other members of that Association, and is, therefore, vitally interested in matters that relate to that society.

We maintain that, in right and justice, each member is entitled to know the affairs of the society. If the transactions of the society have been carried on illegally,—and it does look as if such were the case—why should not every member of the Society know it? If there was any question raised by anyone—member or non-member—as to whether or not the transactions of the society were legal actions, why should not the officers of the American Medical Association be the first to investigate if, through error or otherwise, the Association was breaking any of the laws of Illinois? They should be the first to know, and it should be their duty to ascertain such facts—not only to ascertain such facts, but also to publish them, so that each member might know.

The court, in its decision, took some pains to analyze the cause of this suit, and showed clearly that it is a question of vital interest to the society. The trustees should have had this decision published in the *Journal*, and they should accelerate in any way they may a decision by the Supreme Court.

ARE AUTOMOBILE REGISTRATION LAWS VALID?

The Ohio State Automobile Association is waging a fight truly national in character in which it is aimed to restrain the secretary of state of Ohio from collecting registration taxes on motor cars, and victory has come to its initial efforts in that a Franklin county judge of the state has decided that the present high rate of registration in Ohio is illegal and really constitutes double taxation. The judge in reaching this decision does so on the ground that the present Ohio registration rate not only provides enough money to defray the cost of registration but also sufficient money to be used in road construction and maintenance. He further is correct in holding that moneys for road construction must come from a common tax and not a special registration tax. In that motor car owners in Ohio pay a personal property tax it is *prima facie* evidence that they are burdened with the double-taxation load against which they are protesting.

This initial victory demonstrates that the in-

justices of certain abnormal motor car registration fees is at least filtering into the ears of the judiciary. Should this Ohio county decision be sustained in the supreme court of the state it will stand as a sufficient precedent in the legal world to cause motorists in every other state where high registration fees and personal property taxes are imposed to get busy and see what can be accomplished.

It has been a general under-current of conviction that states have not any right to charge registration fees in excess of the cost of the department, and New York and a few other states made an agreement with the legislature that where a nominal registration fee is imposed it has been in lieu of personal property tax. These states have a much lower registration fee than some other states in which the motorist pays a personal property tax, and pays a wheel tax for the use of the highway in addition to the registration fee. In such states the warfare against illegal double taxation should be taken up with renewed effort. Give Ohio assistance and if the supreme court in Ohio backs up the movement there is a fighting chance that better justice will be meted out in other states in the immediate future.

This decision is of vital importance to every physician, for the profession is now suffering from over-taxation.

PUBLIC HEALTH INSTRUCTION: SUPPLY AND DEMAND.

For the past twenty-five years qualifications in public health have been required of medical officers of health to population of 50,000 or over in Great Britain.[1] This has led to a gradual increase in the institutions offering such instruction until at the present time seventeen universities and three examining boards in the United Kingdom offer such degrees at M. D. in State Medicine, Bachelor and Doctor of Science in Hygiene, Bachelor and Doctor in Hygiene and diplomas in public health.[2]

The requirements for these degrees have varied with the advance of knowledge in the field of preventive medicine, the tendency being to increase the requirements in practical experience in the details of administration and the enforcement of sanitary rules and regulations. The General Medical Council requires that graduates shall attend at least a nine months' curriculum: laboratory instruction shall cover at least four months: six months' practical study of details of administration under medical officers of health of large jurisdiction: or that the applicant himself shall have had three years' experience as a medical officer of health of a population of 15,000 or over. He must also attend a hospital for infectious diseases for three months. Finally, he must submit to an examination covering four days.

Medical literature on public health, school medical inspection and allied branches, especially that in the English journals, shows the almost universal D. P. H. qualification among English health officials. The reason, both for the number of courses offered and the large number of students, lies, of course, in the *requirement by the appointive power* of such qualification.

How does this compare with the attitude of American officials charged with the appointment of public health administrators? The question answers itself. We cannot admit that the ideals in American public health work are lower than in England, but there is a great difference, and politics too often "rules the roost." The greatly increased diffusion of popular information on the elements of preventive medicine in recent years here has increased the demand that contagious diseases should be controlled, that water and milk supplies should be made safe, and latterly that even the supply of defectives and criminals should be arrested at the source. Much excellent work has been done by American health officers. But the fact remains that there is no demand for competent full time health officers except in a few of our largest cities when measured by the financial returns offered. As the truth that money spent in prevention of disease pays fabulous returns gets under the hide of the public more and more communities will insist on competence rather than expediency in the appointment of public health officers, and naturally the pay will have to attract the right kind of men.

There is not much to say about courses in pub-

1. Local Government Act, England and Wales, 1888.

2. Public Health, London, September, 1913, page 349.

lic health instruction in this country. The University of Pennsylvania offered a course for certified sanitarians in 1906 to anyone competent to pursue the course, not necessarily medical graduates. In 1909 it amplified its course and gave the degree of Doctor of Public Hygiene to physicians after studies covering one college year. Thirteen persons have completed the course.

The University of Michigan has offered the degree of Master of Science of Public Health for a course covering one year and the degree of Doctor of Public Health for a course covering two years. To enter either course the applicant must possess the degree of B. S. or A. B. and M. D. Although these courses have been offered for the past three years no one has completed the course and the requirement of the bachelor's degree may soon be omitted.

Harvard University has offered the degree of Doctor of Public Health the past three years and this year Harvard and the Massachusetts Institute of Technology, combined, offer the Certificate of Public Health to medical graduates and Bachelors of Science in Biology for an elective year course in both institutions, the course to be approved by the Administrative Board in each case.

The University of Wisconsin, in connection with the State Department of Public Health, offers a one-year course leading to a diploma of public health. This is open to those who hold a degree in medicine or in medical or sanitary science. The university also offers a two years course with the degree of Dr. P. H. The second year must be spent at the university in original research leading to a thesis. Only one person has obtained the degree to date.

The Detroit College of Medicine and Surgery offers a one-year course to medical graduates leading to the degree of Master of Public Health.

The University of Minnesota will probably offer a six weeks' course next summer for health officers. This seems to cover the field in public health instruction except such partial courses in several medical colleges as are given in the regular medical course and such practical instruction as that in the so-called "School of Sanitary Instruction" of the Chicago Department of Health.

The few courses offered and the small attendance only emphasize the fact that the present emoluments of health officers in this country are not sufficient to induce men to qualify for such a career.

The experiment of trying a combination health department for several towns located within a few miles of each other, now being tried out in Massachusetts and soon to be installed in three small cities in Illinois, may prove to be applicable to many other groups of towns which separately could not offer sufficient inducements for competent sanitarians.

Thus may the hope of Dr. V. C. Vaughan, Dean of the Department of Medicine and Surgery, University of Michigan, come true:

"The people at large are beginning to realize the great value of preventive medicine, and there are many cities now looking for first-class health officers. It will be a long time before positions of this kind will be wholly divorced from political pull, but I am an optimist and believe that it will come in good time."

Dr. M. J. Rosenau, Director of the School for Health Officers, Harvard University and the Massachusetts Institute of Technology, also is optimistic and writes as follows: "It seems to me that there is a demand for this kind of education, and although politics now rules the roost, I think matters are going to mend and efficiency will sooner or later be the rule in health organizations."

SURGERY BEFORE CHRIST.

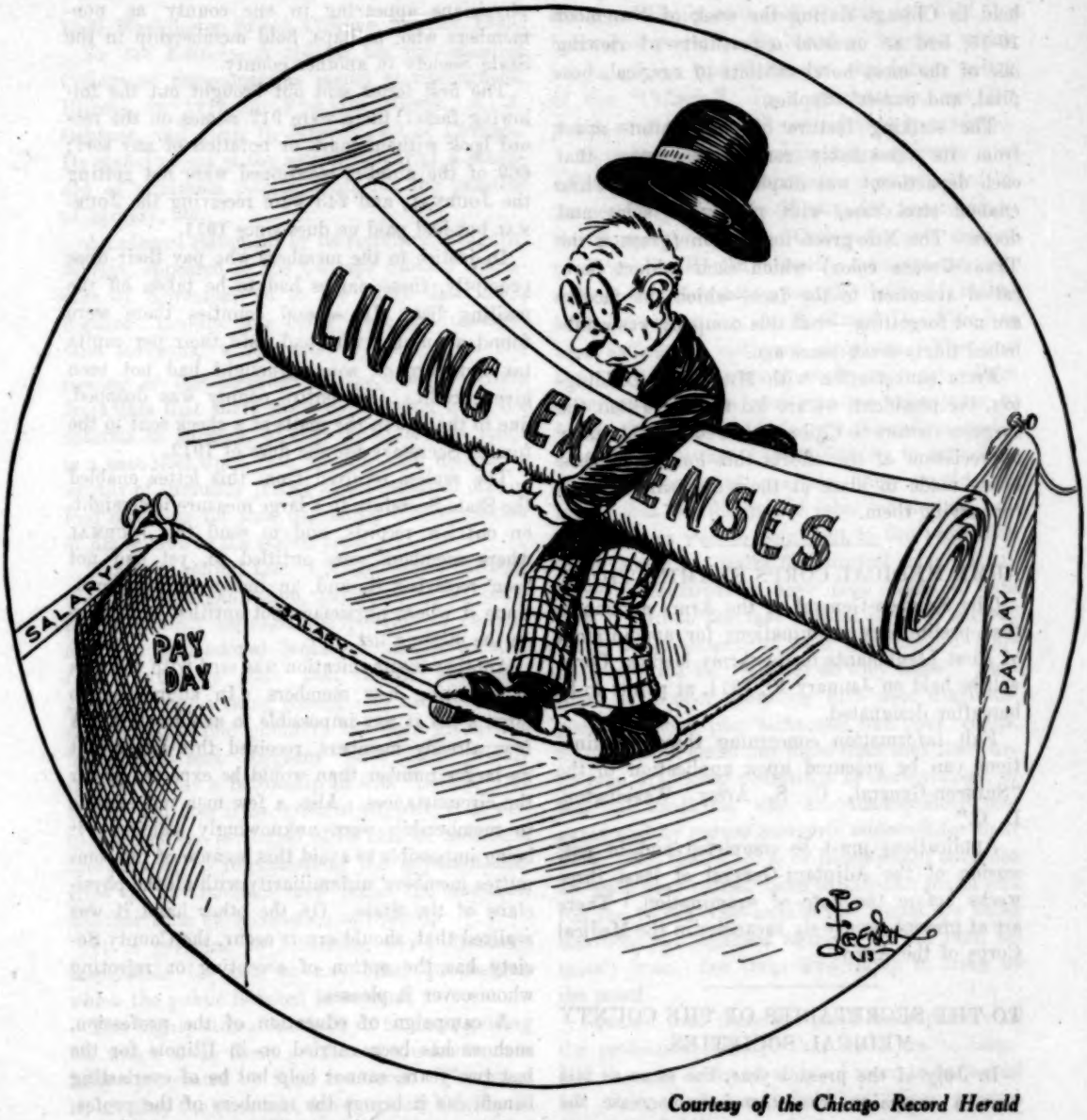
There is strong evidence that the practice of surgery has existed from very ancient times, and it is interesting to note that so complex and delicate an operation as trephining is one of the oldest.

The actual records show that Hippocrates wrote treatises on fractures, dislocations and wounds of the head, in which he described the method of procedure to be followed in the case of a fractured skull. His method was to cut away a piece of bone so that the pressure on the brain might be relieved, says the *London Standard.*

Dr. T. Rice Holmes states that the operation of removing pieces of bone was performed long before historic times. The effects on the skull are plainly seen after death and are visible so long as the bones are preserved.

From Dr. Holmes' investigation of certain

ANXIOUS MOMENTS



Courtesy of the Chicago Record Herald

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skulls of the later stone age in ancient Britain, he has come to the conclusion that some of these had undergone the operation, which must have been performed with a stone instrument.

NOTEWORTHY CLINICAL EXHIBITS.

Delegates to the Clinical Congress of Surgeons held in Chicago during the week of November 10-15, had an unusual opportunity of viewing one of the most novel exhibits of surgical, hospital, and nurses' supplies.

The striking feature of the exhibit—apart from its remarkable completeness—was, that each department was displayed in a pure-white enamel steel case, with plate-glass sides and doors. The Nile-green inscription (green is the Truax-Greene color) which each cabinet bore, called attention to the fact—which the faculty are not forgetting—that this company was established thirty-seven years ago.

From conversation with Mr. B. H. Coddington, the president, we are led to believe that the surgeon-visitors to Chicago showed tangibly their appreciation of the efforts this long-established house made to place at their disposal facilities for serving them.

ARMY MEDICAL CORPS EXAMINATIONS.

The Surgeon-General of the Army announces that preliminary examinations for appointment of First Lieutenants in the Army Medical Corps will be held on January 19, 1914, at points to be hereafter designated.

Full information concerning these examinations can be procured upon application to the "Surgeon-General, U. S. Army, Washington, D. C."

Applications must be completed and in possession of the Adjutant-General at least three weeks before the date of examination. There are at present twenty-six vacancies in the Medical Corps of the Army.

TO THE SECRETARIES OF THE COUNTY MEDICAL SOCIETIES.

In July of the present year, the same as last year, a campaign was started to increase the membership of the State Society. An increase of about 1,200 would make Illinois the largest State Medical Society in the United States.

The membership and non-membership records of the State Secretary were in a somewhat chaotic condition, due to the fact that there is so much moving of physicians from one county to another, as evidenced by the mailing list of the State Society, which shows an average change of address of about fifty a month; names of many physicians appearing in one county as non-members who, perhaps, hold membership in the State Society in another county.

The first letter sent out brought out the following facts: there were 917 names on the record book without mark or notation of any sort; 669 of the number mentioned were not getting the JOURNAL, and 248 were receiving the JOURNAL but had paid no dues since 1911.

In justice to the members who pay their dues promptly, these names had to be taken off the mailing list. In several counties there were found a number who had paid their per capita tax but through some oversight had not been given credit. One entire county was dropped, due to the loss in the mails of a check sent to the former Secretary for the dues of 1912.

The replies received from this letter enabled the State Secretary in a large measure to straighten out his records, and to send the JOURNAL where members were entitled to, yet had not been receiving it, and, in instances, to discontinue it where physicians not entitled to it were on the mailing list.

Another communication was sent with the idea of soliciting new members. In addressing so large a list it was impossible to avoid errors. A few, already members, received this letter, but no larger number than would be expected under the circumstances. Also, a few men not eligible to membership were unknowingly solicited; it being impossible to avoid this because of the committee members' unfamiliarity with all the physicians of the State. On the other hand it was realized that, should errors occur, the County Society has the option of accepting or rejecting whomsoever it pleases.

A campaign of education of the profession, such as has been carried on in Illinois for the last two years, cannot help but be of everlasting benefit, as it brings the members of the profession in touch with each other and established a familiarity of the physicians with conditions that are of mutual interest. It helps to impress upon

the profession more vividly than in any other way the old motto: "In union there is strength."

Correspondence

COLLEGE OF SURGEONS. WHAT? WHO? WHY?

15 E. Washington Street, Chicago, Nov. 22, 1913.

To the Editor:—A charter for the so-called College of Surgeons was issued at Springfield, Illinois, in 1912, to Franklin Martin, A. J. Ochsner, and John B. Murphy, all of Chicago. Its stated object is the establishment of a standard of minimum requirements for the practice of surgery, etc.

An alleged statement by its secretary, Franklin Martin, appeared in the *Chicago Sunday Examiner* of November 16 to the effect that much legalized murder was being done by incompetent surgeons, which was to cease with the coming of this so-called college. We conclude from this that there must be a crying need for reforms in surgery, or else the statement itself is a base libel upon fact, and the man making it worthy of summary justice at the hands of organized medicine for thus degrading the reputation of his fellows in the public press.

The men behind this "College" have, through the plan of organization, published in its prospectus, plainly assumed the position of censors of their professional brethren, though without other authority than that which any self-appointed self-seeking coterie may assume. And since considerable publicity has been given this movement, and surgeons have been widely invited to buy a fellowship in this "College" for $25.00 and give it their moral support, it is well to examine the personnel of its charter members, the manner of organization, the apparent motives of its founders, and probe the question, whether such an institution is needed.

It is germane to scrutinize the individuals responsible for this or any other proposition which the public is asked to support.

The highly ethical methods of business-getting for which these three gentlemen are known are fully appreciated by their confreres. The point is, are they the ones best fitted to establish standards, formulate rules of conduct, pass upon their fellows and control surgical practice in America? Are their names synonymous with public spirit, unselfish devotion to the welfare of the profession? Are they noted for never splitting fees, nor stealing cases from brother practitioners, nor cutting the prices of operation quoted to a patient by a confrere, nor courting newspaper publicity? These are plain and important questions, for the three gentlemen under consideration practically own that charter, and hold the balance of power in the board of trustees, which are to govern and determine the future policy of the "College." In a corporation, not for profit, such perpetuated control is to be expected.

As to the plan of organization, a grievous mistake was made by the originators, as admitted by the secretary, Franklin Martin, for, according to the prospectus of the "College," upon motion of Franklin Martin himself, members are admitted to fellowship upon the basis of alphabetical classification, A, B, C and D. This has been sufficiently criticized elsewhere. The profession of this continent needs no royal college of surgeons; if the men who are attempting to found this one, desire to put themselves under a special glass case, hoping thereby to attract to themselves surgical practice, they should not forget that the distinctive label which they buy will serve as well to point out to the profession under which hat walks the surgical snob. Many omnibus declarations have been made of late with regard to the vast amount of poor surgery being done, statements such as Franklin Martin's, referred to. Whence do they come? That there is no poor operating with poor diagnosis, poor judgment, poor technique, and poor results, no one would claim any more than that there are no men practicing pediatrics, or dermatology, or internal medicine, who are inadequately prepared and by nature meagerly endowed for their work. But that a horde of incompetent surgeons are each year turned loose to kill and maim and rob the people, vast numbers of whom are being sacrificed to "legalized murder," is not even remotely true. Let them who imply it bring us the proof.

Granted that there are some incompetents in the profession, granted that there are occasionally those to be found who are more to be feared for their unlicensed boldness than trusted for their skill, experience, and conscience; granted that there are both crooks and

ignoramuses among surgeons, yet, they are in hopeless minority, and their total work is minimal, as compared with the immense amount of skilful surgery that is being performed, not alone in the great hospitals by the limelight performers, but by a vast number of modest operators all over the country; with the result that American surgery is upon a high plane of efficiency. Let him who would dispute this bring forward comparative data of operative results, and reliable mortality statistics from many surgeons and many operating rooms.

The morally unfit, and the technically unfit in surgery are gradually discovered and automatically eliminated by the referring practitioner and the patronizing laity, more surely and more speedily than by legislation. Who then is responsible for this hue and cry about the awful sacrifice of the public to surgical incompetence? It is certainly not the suffering public. The people have demanded no royal college of surgeons, and rest assured that if that public were really being sacrificed or maltreated at the hands of the medical fraternity, it would be heard from in no uncertain fashion.

But "the people have no criterion by which to choose a fit surgeon," yet, somehow, they do find him, and if they need advice in the matter, the general practitioner is always at hand to direct. He knows, and his reputation is at stake whenever he refers a case for operation. And every individual surgeon builds up his following or fails upon the work he is known to deliver satisfactorily or otherwise.

It is certainly not the general practitioner who is making this plea for new surgical requirements. He has entered no protest. To him come the cases needing operation. Upon him is the responsibility of referring the patient, for the operative results will come home to roost with him. This natural selfish interest of the family doctor in keeping his reputation clean and holding the confidence of the patient and the family, as much as anything else, puts the patient into competent surgical hands and so the public is safe-guarded automatically.

If not the general public nor the general practitioner, who then is so noisily demanding new surgical standards, new classification, and new public lists of worthy operators? and lo, to answer, there rises amongst its dwindling clientele a little coterie of "eminent surgeons," who, a decade or more ago, were the hubs of surgical reference cases, and of all things surgical. But this clamor for surgical reform of these leaders, many of them professors, heads of departments in our medical colleges, and post-graduate schools, is a bit incongruous, is it not? They suddenly want their students restricted in the use of the knife, and yet have they not for decades been signing diplomas which certify to the people that their graduates are competent to handle medical and surgical ills? Is it possible that these mentors have thus been committing a fraud upon the public? On the contrary, so thorough has been their teaching, so fine the modern clinical advantages, so abundant and explicit the literature, so open the doors of hospitals, dispensaries, and private clinics, that an army of ex-internes and special assistants, and ardent students have gone out with surgical preparedness year after year to build up-to-date hospitals at almost every sizable cross roads. To these young, alert, ambitious operators, therefore, are trooping the patients who formerly were sent to the great centers, and they are in safe hands. But here, sir, you have the milk of the cocoanut—in other words, these fellows attempt to put over upon the American profession a raw deal—the "College of Surgeons" for control of surgical honor, title, place, opportunity, and patients, by exhibition of their class A label in contrast with the near-title given everybody else. Under guise of elevating surgery they simply reach for economic power—in plain English, they want the business.

Some unthinking surgeons, dazzled by the display of red fire and confused by the discharge of blank cartridges, have been actually stampeded into joining this college at its recent inauguration in Chicago, fearing lest they might otherwise lose out. A good many more, who had been almost persuaded, received enlightenment in time, and wisely withheld their applications. Some one is to be congratulated.

ARTHUR M. CORWIN.

THE A. M. A. FOX COMES OUT OF HIS HOLE.

Chicago, Ill., Nov. 28, 1913.

The most uncompromising antagonist of the ring that dominates the A. M. A. must admire

the cunning with which it has avoided all reference in the *Journal A. M. A.* to the reform suggestions which I have publicly made year after year, for five years past.

The reforms suggested menaced the integrity of the politico-commercial machine which the rank and file of the membership is supporting at the rate of nearly $300,000 per year.

The reforms also menaced the business interests of the politico-commercial gang which is running a "corporation not for profit" with A BUSINESS OF ABOUT $1,000,000 PER YEAR.

Who could blame the ring for remaining silent and thereby keeping the leather goggles on the eyes of the members, who own the *Journal* yet enjoy it not? Self-defense is the first law of nature—and "self" is writ large on the mental horizons of the A. M. A. ring.

But the recent decision of the Cook County Appellate Court smoked the wily fox out of his hole and he has at last pretended to take his victims into his confidence.

In the *Journal A. M. A.* for Nov. 22, 1913, appears a letter signed by Drs. Wm. T. Councilman, chairman of the trustees of the A. M. A. and M. L. Harris, secretary of the board of trustees, in which the membership is told that the recent decision of the Appellate Court merely affects Dr. Lydston and the State's Attorney, and is of no interest to the A. M. A. The trustee further states that the legal status of the A. M. A. has never been in doubt, etc., etc., and this mess of sophistry, evasion and deceit, appears over the signatures of the two principal trustees of the A. M. A.!

Drs. Councilman and Harris, of course, represent the board of trustees and their communication is advised and official. Now the aforesaid trustees either know the facts or they do not. If they know them they have deliberately falsified. If they do not know them they are incompetents who should forthwith be sent to the imbecile ward at Dunning.

That the writers of the *Journal* letter are ignorant of the difference between quo warranto and mandamus proceedings is evident on reading their effusion.

The least charitable inference that can be drawn from the trustees' letter is that it was dictated by the Manager-Boss and obediently signed by the trustees. Can it be true that even the trustees listen to the "master's voice"?

In passing I will ask why the *Journal* did not publish the entire court decision. This would have shown conclusively whether or not the A. M. A. was affected by it. The complete text appears in the current issue of the *Journal* of the American Medical Editors Association, with a request that the medical press reproduce it! Is not the *Journal* of the A. M. A. as much interested in the decision as are the independent medical press and its readers?

It is *currently* reported that "orders" have been issued from 535 N. Dearborn Street to the various State journals not to mention the Appellate Court decision. This was hardly necessary, for with few exceptions the State journals are well trained—*so well trained that they "roll over and play dead" automatically.*

Now the fact is that the suit was contested by lawyers employed by either the Manager-Boss on his own account, or by the trustees of the A. M. A. Whether the boss paid the expenses or the A. M. A. footed the bills deponent saith not.

Right at this moment the gang is framing up a scheme of reorganization, to forestall the action of the Supreme Court in case it should be adverse to the gang. In this scheme of reorganization the "proxy" vote will loom large. Let the membership beware of this. When reorganization comes let oil be poured on the troubled waters of medical politics, but let it not be Standard Oil.

One knowing the facts might well inquire whether the trustees of the A. M. A. are as intelligent and ingenuous as the letter in the *Journal* would imply.

I will here reiterate what I have often before said, viz.: It really is a matter of indifference to me whether or not the Supreme Court sustains the lower court. IF THE ASSOCIATION'S OPERATIONS ARE LEGAL, WELL AND GOOD; IF THEY ARE NOT, LET US MAKE THEM LEGAL.

The Appellate Court by its decision has shown that I had just grounds for an inquiry into the matter, and that is sufficient vindication for one who, after all, was merely trying to get in the courts a hearing to which as member of the A. M. A. he was justly entitled—and which honest officials would have been glad to grant

without contest. The issue is one which should be settled in justice to the members.

In conclusion, and apropos of the official statement by Drs. Councilman and Harris, which in effect is that the A. M. A. is not interested in the decision, the membership of the A. M. A. should remember that the Appellate Court has decided:

FIRST. THAT OUR ELECTIONS ARE ILLEGAL!

SECOND. THAT OUR DELEGATE SYSTEM IS ILLEGAL!

THIRD. THAT EVERY MEMBER OF THE A. M. A. IS ENTITLED TO A VOTE!

The officers of the A. M. A. have taken an appeal to the Supreme Court, using the State's Attorney's office as a stalking-horse.

Is not the A. M. A. affected by the decision—and is not the decision of sufficient interest and importance to the members to warrant—aye, demand—its verbatim publication in the *Journal*?

Let the members answer—the officers will not.

Who owns the association, and who owns the *Journal*? Whose money is supporting the A. M. A.? What are the officers—our masters or our servants?

J. FRANK LYDSTON, M. D.

ARTICLES TOO LONG.

Greenville, Ill.

To the Editor: My reasons for not taking the *Journal A. M. A.* are:

1. It has too many long-winded articles.

2. Only the select few have any rights and they are surgeons or specialists in some branch of medicine or surgery who overlook the needs of the majority in preparing their articles.

3. It is not worth the price asked. There are dozens of other medical journals just as good, and some of them better, for less money.

4. The reforms the JOURNAL promise are soon forgotten and the physicians are left to fight out their own battles locally.

5. I take a number of medical journals, including the ILLINOIS MEDICAL JOURNAL. It's getting to be like the *Journal A. M. A.*, inasmuch as its pages are filled with long-winded articles that only about 25 per cent. of the physicians read, instead of short, practical articles which physicians can apply in the every day routine of general practice. A recent number of the ILLINOIS MEDICAL JOURNAL contained one article covering 14 pages. If we want to read a book, we'll buy one. Most physicians haven't the time or inclination to read 14 pages on one subject in a medical journal. Physicians, am I right? If so, back me up, either personally or through the columns of the JOURNAL.

O. C. CHURCH, M. D.

(The editors feel that there is much truth in this criticism and appeal to the contributors to follow this suggestion.)

TWO EX-PRESIDENTS DIE.

Champaign, Ill.

To the Editor:—Dr. W. K. Newcomb died of pneumonia at his home in this city at 3 a. m., November 25, 1913, regretted by professional brethren and laymen alike.

Last week Dr. John T. McAnally was buried at his home in Carbondale. These men were near the same age, their histories were not dissimilar, they were much alike in appearance and it is a singular coincidence that they should have passed from earth at near the same time. Both were near the same stature and were very similar in thought and manner.

Both were men of comparatively few words and those they weighed carefully before giving them utterance. Both were courteous gentlemen and both were exemplary citizens.

Both were hard workers in their chosen calling and both had been honored with the presidency of the Illinois State Medical Society. Both are regretted by many medical friends throughout the length and breadth of the State of Illinois.

CHAS. B. JOHNSON, M.D.

MILK DROPLETS.

A cow-fed baby is a half-mothered baby.

A half-mothered baby is a baby with a half a chance.

The half-mothered city babies get much of their trouble from the country.

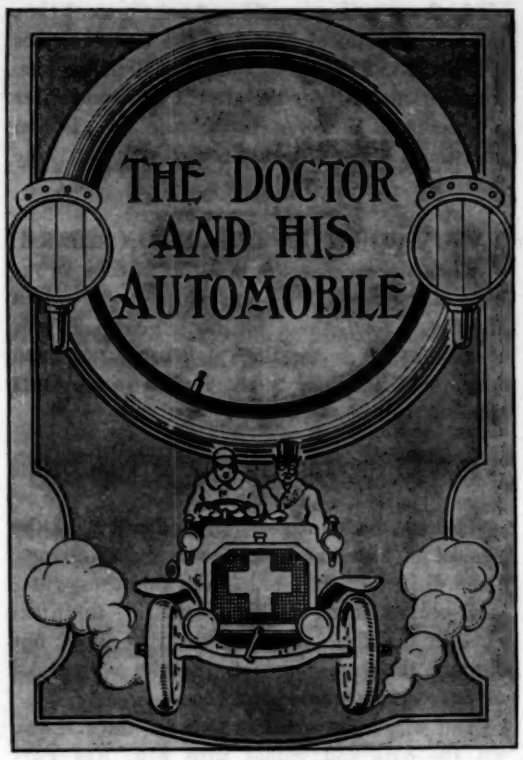
D-i-r-t-y m-i-l-k spells Trouble, with a capital T.

Pasteurization is a means for minimizing trouble.

If there must be cow-fed babies there must be pasteurization.

Know how to kill the trouble in milk. See the instructions for pasteurizing milk in this issue.

—From the Bulletin, Chicago Department of Health.



Auto Sparks and Kicks

COLD WEATHER HINTS.

RADIATOR ANTI-FREEZE MIXTURES

A mixture of 30 per cent. to 40 per cent. of volume of denatured or wood alcohol with water will freeze from 10 to 20 degrees below zero, fahrenheit.

The mixtures given below are safe for stationary engines or motor cars, and are not expensive. Either denatured alcohol or wood alcohol may be used with commercial glycerine. The preparations given will make five gallons of solution.

Will not freeze at 15 degrees above zero:

Water	4 gallons
Alcohol	½ gallon
Glycerine	½ gallon

Will not freeze at 8 degrees above zero:

Water	3¾ gallons
Alcohol	5 pints
Glycerine	5 pints

Will not freeze at 10 degrees below zero:

Water	3 gallons 1 pint
Alcohol	1 gallon 1 quart
Glycerine	2 quarts 1 pint

Will not freeze at 20 degrees below zero:

Water	1 gallon 1 quart
Alcohol	2 gallons 2 quarts
Glycerine	1 gallon 1 quart

The other cold weather precaution that should not be neglected is to make sure that the motor will get plenty of lubricating oil. Oil becomes thicker when it gets cold and will not feed through the pipes as rapidly as when it is warm.—*Motor Age.*

ALCOHOL AS A CARBON REMOVER.

A test conducted recently by Joseph A. Anglada, chairman metropolitan section Society of Automobile Engineers, showed the following results: 1. That denatured alcohol is an efficient decarbonizer for motor car engines. 2. That it does not injuriously affect the surfaces of the metals with which it comes in contact. 3. The best results from the use of denatured alcohol as a decarbonizer are obtained when the combustion space of a hot engine is filled entirely with the alcohol and this permitted to remain in the space for a period not less than six hours. 4. Denatured alcohol will act as a carbon remover when the engine is cold provided the liquid alcohol is in contact with the carbon covered surfaces. However, the action in this case is not as rapid as if the engine were hot.—*Motor Age.*

For easy starting in cold weather prime engine with wool or denatured alcohol, or better still, use a small amount of ether.

Be sure the spark pluga are screwed tightly into cylinders. Make sure that the connections of the plugs are secure and won't jar loose.

Occasionally, when an engine give symptoms of coming to a halt because of a shortage of fuel, it can be induced to fire long enough to reach a supply station by violently jouncing the car on its springs, the theory being that a small quantity of fuel may remain in one part of the tank lower than the outlet to the carburetor. This is particularly true of force feed systems, where the outlet projects for some little distance up from the bottom of the tank.

WIRE WHEELS VERSUS WOODEN WHEELS.

P. C. Vawter of the Chicago Pathfinder branch is a strong advocate of wire wheels. He points out, as indicating the popularity of wire wheels that of the 394 cars exhibited at the recent Brussels salon no less than 217 were thus equipped.

The following advantages are claimed for wire wheels:

Increase tire mileage about 50 per cent.
Safeguard your life in case of accident.
Increase your car life.
Make an easier riding car.
Make an easier steering car.
Make a better looking car.
Increase your mileage per gallon of fuel.
Disadvantages so far noted:
Harder to clean.

STARTING THE MOTOR.

Where a motor has stood unworked for a long time, the turning over of it frequently happens to be difficult and there is little or no compression. Injecting gasoline into the cylinders by means of the compression tap or the spark plug orifice may aggravate the evil by drying up what little oil remains on the walls. Try priming with one-half lubricating oil and one-half kerosene. A thin engine oil will flow between and around the piston rings and give good compression at once. It will disperse the old oil or liquify it and render it useful. With good compression, good suction will result and the engine will start quickly.—*Auto Trade Journal.*

BENZOL AS FUEL.

One of the possible motor car fuels of the future is benzine, or benzol (C_6H_6). Benzol is usually known as an impure benzine or unrefined benzine. In England, where the price of gasoline is from 38 to 50 cents per gallon, benzol is being used to a limited extent. This has the advantage that it is not as difficult to vaporize as kerosene, is more stable than gasoline and gives even more power owing to its greater heat units. It can be used in automobile engines without their being altered. It is not quite as volatile as gasoline, but is sufficiently so that a motor can be started with it using carburetors of ordinary design. If properly refined it does not carbonize to any greater extent than gasoline when combined with air in the proper proportions. At the present time the market price of benzol in the United States is from 22 to 25 cents per gallon in 50-gallon lots. This eliminates it for the present as a competitor of gasoline. However, if the price of gasoline goes much above 25 cents benzol may enter the field.

PNEUMATIC TIRE DEFLATION ALARM.

When the air pressure in a tire fitted with the Polo alarm drops to a point where it will injure the tire, a loud, shrill whistle is given off, it is claimed by the maker, the Polo Pneumatic Alarm Mfg. Co., Clear Lake, S. D. The alarm supplants the dust cap of the ordinary tire valve.

A MONEY SAVER FOR THE AUTOMOBILE OWNER.

The greatest damage to tires is caused by the neglect of stone and glass cuts in the casings. Sand, dirt and water are forced into these cuts; sand-pockets form. Next, the fabric—the backbone of the tire—rots, and the tube blows out through the weakened spot. Result; a whole lot of unnecessary trouble and expense.

You will make one tire outwear three if you fill the cuts and gashes with new, live Para Rubber, and vulcanize them with a Shaler.

TO KEEP RAIN AND SNOW FROM ADHERING TO WINDSHIELD.

Common yellow soap is good for keeping the front of a windshield free from drops of water when driving in the rain or snow. The glass should be rubbed with the soap and then polished with a dry cloth.

—Various theories have been advanced to explain low death rates of married persons of both sexes, among them the effect of marital selection, the better economic condition of married persons, and the effect of the marital relation itself. Dr. Jacques Bertillon, coming to the subject from the study of occupational mortality, in which he reaches the conclusion that low death rates are found in occupations where the workman is more or less supervised, surrounded by influences tending to prevent dissipation and conducive to regular hours and regular habits, etc., thinks that much the same influence may be ascribed to marriage and family life. Because the married man is supervised and because he has incentives to self-restraint and to the care of his health, he has a lower mortality than the bachelor. Perhaps all of these are factors in the problem, but our statistics cannot at present weigh the importance of each.—*Walter F. Wilcox, in Bulletin New York State Board of Health.*

Society Proceedings

CARROLL COUNTY.

The Carroll County Medical Society met in Mt. Carroll, October 14, 1913. The following officers were elected for 1914: President, Nelson Rhinedollar; vice-president, O. F. May; secretary and treasurer, H. S. Metcalf. The program was as follows:

Morning session: Dr. Hendricks read a paper on "Hip Tuberculosis in Childhood," Dr. McPherson rendered a report on the meeting of the Illinois Medical Society.

Afternoon session: Dr. Metcalf presented a "Review of a Great Sociological Play." This paper was discussed by Rev. W. J. Peacock, Rev. E. G. Cattermole, Drs. Johnson, Rice and Packard, Judge Wingert and Henry Mackay, Esq. Mr. Daniel Lichty of Rockford then presented a paper on "Study, Care and Treatment of the Child's and Adolescent's Heart."

The subject of Dr. Metcalf's review was Brieux's great play, "Damaged Goods," which is a study of syphilis and its bearing on marriage. It is a story as terrible as the tragedy of Sophocles. In closing he said: "Were I the publisher of it I would present on the title page the portrait of a congenital syphilitic, a creature half man, half beast, whom the Lord permitted to live a long time in Mt. Carroll and I would decorate the margins of the pages with pictures of sore, deformed and idiotic babies."

Rev. Peacock said: "The physician in the play speaks with tremendous authority. He speaks as every physician ought to feel as a servant of humanity, charged by his very intimacy with human nature with a duty to society."

Rev. Cattermole said no more vital subject could present itself to a public teacher of morals and religion than the subject of this play. The matter received its full consideration only when, in meetings like this, the medical profession and the teacher of morals and religion plan together the work that must be done. He believes that sex instruction can and should be given both by parents, teachers and physicians, each being able to impress the facts upon the mind of the youth from a particular angle. The day must come when in every high school and college lectures will be given separately to the boys and girls on the anatomy, physiology and hygienics of the sexual organs and no one is half so well qualified to perform this task as the well-informed, right-minded physician.

Dr. Johnson asked what the physician should do when a patient infected with venereal disease is about to marry an innocent woman and thought there should be no doubt as to the line of one's duty.

Drs. Rice and Packard thought the time was coming when acutely diseased syphilitics must be placarded, and when such cases must be reported with other communicable diseases to the boards of health.

Mr. Mackay said that we are proud of our fine horses, cattle and hogs, made so by careful selection and breeding; that the state of Illinois, not long since, enacted a law requiring the registration of all stallions; that, on the contrary, there was little or no legal restriction against defective persons marrying, with the exception of the law prohibiting the marriage of cousins. To limit the procreation of the unfit he would compel candidates for marriage to submit to an examination by a competent board and he advocated sterilization for those found with hereditary diseases.

Dr. Daniel Lichty noted the interesting nature of the development and adaptation to function of the human heart and circulation. Acquired heart diseases and congenital heart malformations resulting fatally are more frequent than is generally realized. In the United States are 500,000 children in public schools with organic heart disease, and as many more not in school. Food and fatigue, chemical toxins, rather than bacterias, cause the acidoses that increase the viscosity of the blood and blood pressure. As remedies he suggested abstinence, elimination, alkaline drinks, hydrotherapy and gentle massage.

CLARK COUNTY

Society met in the Masonic Building, Martinsville, Oct. 9, 1913, at 2 p. m. President McCullough being absent, Dr. Prewett was elected president protempore. Members present: Drs. Lewis, Rowland, S. C. Bradley, R. H. Bradley, Mitchell, Haslitt, Prewett, Pearce, Weir, Marlow, Bruce, Johnson and Rogers. Visitors present: Dr. J. C. R. Wetstein of Effingham, Drs. B. G. R. Williams and Hazen of Paris. Minutes were read and approved.

Dr. Prewett reported a case of hematuria in man aged 75 years, in good health, with no pain, active; passes blood evenings, after working hard. Dr. Wetstein suggested that the causal factors should be first considered whether stone, infection, etc. If no active cause, use adrenalin in pelvis of kidney. No medicine by mouth seemed to do any good. Ergot was suggested by Dr. Bruce.

A case of pancreatic cyst was reported by Drs. Hazen and Prewett. The cyst was removed, containing two quarts of fluid.

Dr. Hazen reported a case of bleeding from vein in bladder, found with enlarged prostate; prostate was removed and case cured.

Dr. Wetstein presented his paper on "Infectious Diseases of the Urinary Tract," which was well received and considered as a thing a little out of the ordinary and furnishing something for us to think about in the near future. That more of our obscure cases should be investigated by laboratory methods, for infection of the urinary organs. That nephritis is probably nearly always caused by infection and that the whole subject of diseases of the kidneys is now being rewritten accordingly.

A limited, though interesting, discussion followed, participated in by several members and visitors.

A vote of thanks was extended Dr. Wetstein for his presence and excellent paper.

L. J. WEIR, Secretary.

COOK COUNTY.

CHICAGO MEDICAL SOCIETY.

Regular Meeting, October 1, 1913.

The program of this meeting consisted in a symposium on "The Teaching of Sex Hygiene in the Public Schools."

1. "The Society of Sex Hygiene," Prof. C. R. Henderson, University of Chicago.
2. "The Boy," William T. Belfield.
3. "The Girl," Rachelle S. Yarros.
4. "Practicable Possibilities," Ella Flagg Young, superintendent Chicago public schools.
5. "Instruction in the Home," Rev. J. W. Melody.
6. "The Standpoint of the Laity," C. S. Cutting, judge of Probate Court.
7. "Is Sterilization Destined to Become a Social Menace?" G. Frank Ldyston.
8. "Tuberculine Reaction in Fibromyomata of the Uterus," A. Weiner.

The attendance at this meeting was so large that many were unable to enter the hall.

Regular Meeting, October 8, 1913.

A joint clinical meeting with the west side branch at the Cook County Hospital.

1. "Malaria," S. R. Slaymaker.

Discussion by E. F. Wells, Charles L. Mix and Theodore Tieken.

2. "Typhoid Fever," William Butler.

Discussion by J. B. Herrick and J. Miller.

Regular Meeting, October 15, 1913.

1. "Obstetrics in General Practice," Fred Hollenbeck.

Discussion by W. A. Dorland, H. M. Stowe and C. S. Bacon.

2. "Injury to Pelvic Outlet Following Labor or Any Other Cause—Should Immediate Repair Be Made?" H. Edward Sauer.

Discussion by Henry F. Lewis, C. Culbertson and A. Goldspohn.

3. "Demonstration of a Patient with Recurrent Carcinoma of the Breast, Treated by Injections of Quinine Bisulphate, Which Are Made Radioactive by Means of Roentgen Rays After Injection," Max Reichmann.

Discussion by Noble Eberhard and Isidore Trostler.

Regular Meeting, October 22, 1913.

A joint clinical meeting with the south side branch.

1. "Presentation of Cases: (a) Trichinosis; (b) Typhoid Fever, with Complications," Paul Chester.
2. "Presentation of Cases: Fractures of the Long Bones at and Near Joints," J. B. Murphy.

Discussion by William Hessert and G. W. Green.

3. "Presentation of Case: Inguinal Hernia." Operation during meeting. E. Willis Andrews.

Discussion by A. Zimmerman and T. A. Davis.

4. "Presentation of Cases: (a) Spinal Cord Lesions; (b) Gastric Ulcer; Duodenal Ulcer; Gall Bladder Disease," Charles L. Mix.

Discussion by L. H. Mettler and Frederick Tice.

Regular Meeting, October 29, 1913.

Joint meeting with the German Medical Society.

1. "Pyophobia," C. A. Parker.
2. "Hyperacidity of the Stomach," Prof. A. Schmidt, Halle, Germany.

Discussion by B. W. Sippy, J. A. Robison, Milton Mack, Emil Ries and A. E. Halstead.

Regular Meeting, November 5, 1913.

This was a public safety night.

1. "The Public Burden of the Insecurity of Life," Graham Taylor.
2. "Safety First," Peter M. Hoffman, coroner.
3. "Suicide," F. A. Jefferson.
4. "Tetanus," D. N. Eisendrath.
5. "Hemorrhage, Concussion and Shock," J. D. Robertson.

Regular Meeting, November 12, 1913.

1. "Relations of and the Lesions Produced by Various Forms of Streptococci with Special Reference to Arthritis," E. C. Rosenow.
2. "Clinical Aspects and Medical Management of Arthritis Deformans," Frank Billings.
3. Etiology of Biliary Tract Infections and Their Relations to Duodenal Ulcer and Appendicitis," Charles L. Mix.
4. "Surgery of These Lesions," John B. Murphy.

CRAWFORD COUNTY

Crawford County Medical Society met in regular session at the Carnegie Library, November 14, 1913. In the absence of the president, the meeting was called to order by the vice-president, Dr. I. L. Firebaugh, at 2:00 o'clock p. m., the following members being present: I. L. Firebaugh, T. N. Rafferty, C. E. Price, H. N. Rafferty, J. W. Carlisle, G. H. Henry, J. B. Cato, A. Lyman Lowe, Charles E. Davis and Leroy Newlin.

The minutes of the September meeting were read and approved. On motion of C. E. Price, duly seconded and carried, the name of Dr. G. F. Schmidt was dropped from the Society.

Dr. Charles E. Davis read a paper on "Serum Therapy," which was well received and fully discussed by the different members present. Among the different points brought out was the fact that serum therapy was a very important factor in the treatment of many diseases; also that in its employment the physician should have well in mind the condition of the patient in connection with the purpose for which it is being employed and should understand the difference between vaccine and serum therapy, keep abreast with the times and watch its development and not be entirely guided by the manufacturing chemists who make these

preparations to sell. Dr. Davis closed the discussion.

Dr. J. W. Carlisle reported an interesting case and efficient treatment of "perineal abscess" following some twenty days after a normal labor, and after the patient had apparently made a good recovery. The report of the case brought out an interesting discussion and some valuable points in connection with such cases.

Dr. G. H. Henry mentioned an interesting case of enlarged glands in a child two years old which simulated a diphtheritic condition minus the characteristic throat symptoms which usually accompany diphtheria.

On motion the Society adjourned to again convene in January.

LeRoy Newlin, Secretary.

FULTON COUNTY.

The sixteenth annual meeting of the Fulton County Medical Society met in the auditorium of the Y. M. C. A. building in Canton, Oct. 7, 1913, and was called to order at 10 a. m. by President Snively. Minutes of the July meeting were read and approved. Drs. Hayes and Parks were appointed as auditing committee. Dr. Chapin being the only member of the membership committee present, the president appointed Drs. Adams and Stoops as members of that committee to act at this meeting.

Applications for membership from Drs. M. H. Whitlock and J. R. Smith, both of Canton, and for reinstatement from Drs. T. R. Plumer and William Plumer of Farmington were read and referred to the membership committee.

Chapin and Reagan moved that the rules be suspended and that the membership committee report on all applications at this meeting and that a vote be taken on such applications. Carried.

Auditing committee reported that they had examined the books of the secretary-treasurer and found them correct. Report adopted.

The membership committee reported favorably on the applications of Drs. Smith and Whitlock; also reinstatement of Drs. Plumer. Report adopted.

Drs. Chapin and Nelson moved that the secretary cast the vote of those present in favor of the applicants. Carried.

Secretary cast ten votes and the president declared Drs. Smith, Whitlock and Plumer elected to membership.

The following officers were then elected: President, Dr. I. L. Beatty, Fairview; first vice-president, Dr. C. E. Howard, Lewistown; second vice-president, Dr. L. R. Chapin, Canton; secretary-treasurer, Dr. D. S. Ray, Cuba; necrologist, Dr. P. H. Stoops, Ipava; membership committee, Dr. R. W. Reagan, Canton; censor, Dr. Jennie Parks, Cuba; delegate, Dr. P. H. Stoops, Ipava; public health and education, Dr. C. D. Snively, Ipava; legislative committee. Dr. L. R. Chapin, Canton.

Adjourned until 1:30 p. m.

Called to order by President Snively at 1:30 p. m.

Dr. D. D. Kirby of Peoria read a paper on "Facts and Fallacies in the Treatment of Gonorrhea in the Male."

Dr. W. B. Wakefield of Peoria read a paper on "Occupational Skin Diseases."

These papers were discussed and the meeting adjourned to the Variety Theater, where Dr. Carl E. Black of Jacksonville gave a paper with lantern demonstrations on "Displacement of the Colon." At the conclusion of Dr. Black's paper adjournment was taken and the members with their lady friends at 5 o'clock met at the Congregational Church and busied themselves with a bountiful feast prepared and served by the ladies of that church. With the tables cleared and Dr. Coleman as toastmaster, the hour was enjoyed by talks from almost all present.

Collections at this meeting totaled $97.50.

Those present were: Dr. Carl E. Black of Jacksonville; Drs. D. D. Kirby and W. B. Wakefield of Peoria; Drs. Essix, E. E. Davis, Boynton, Welch, C. D. Snively, P. H. Stoops, L. H. Chapin, C. E. Howard, E. W. Reagan, T. C. Hayes, Jennie Parks, J. M. Adams, W. D. Nelson, C. H. Hamilton, C. N. Allison, E. M. Price, J. C. Simmons, T. H. Reagan, M. H. Whitlock, R. P. Grimm, William Plumer, J. R. Harrod, W. E. Shallenberger, P. S. Scholes, Veda C. Murphy, Dr. Turner and D. S. Ray. Total, 32.

Bills for the year audited and approved by the auditing committee and paid by the treasurer, $218.74.

HENDERSON COUNTY.

A meeting of the Henderson County Medical Society was held at Stronghurst, November 4, 1913. Members present: Drs. I. F. Harter, H. L. Marshall, A. E. Louver, Edwin E. Bond, H. V. Prescott, J. L. Norris, B. L. Ditto and J. P. Riggs. Visitors: Drs. J. F. Percy, C. A. Finley, A. L. Stotts, W. Rose of Galesburg; Smith of Seaton; William Prescott of Dallas City; Evans of Springfield; J. W. Medley of Disco; J. Hoyt Huckins of Terre Haute; Ralph Graham and C. Sherrick of Monmouth; De Witt Loomis of Lomax.

After a sumptuous luncheon was served we proceeded to reading papers. Dr. F. B. Dorsey of Keokuk, Iowa, read a paper on "Indications for Cæsarean Operations; Dr. Smith of Seaton read a paper on "Pyelitis;" Dr. A. F. Stotts of Galesburg read a paper on "Intravenous Medication;" Dr. J. F. Percy of Galesburg read a paper on "A Point of View of Nephritis and Its Treatment."

The papers were very interesting and were ably discussed by all present. After the papers and discussion Dr. De Witt Loomis presented his application for membership and was received as a member of this society.

Adjourned to meet at a time to be agreed upon by the president and secretary.

Hugh L. Marshall, President.
J. P. Riggs, Secretary.

MACOUPIN COUNTY

The Macoupin County Medical Society met in regular session in the Masonic Hall at Palmyra, Oct. 28, 1913. Called to order by acting president, J. S. Collins of Carlinville at 1 p. m. Dr. Ben Hudson was appointed secretary pro tempore. Minutes of last session were read and approved. Drs. I. H. Neece, E. W. Crum and W. B. Dalton were appointed censors. Applications of Drs. L. E. Ambrose, Mt. Olive, and J. W. Berryman, Scotville, were received and referred to censors for report at next meeting. Carlinville was selected as next meeting place. Drs. J. S. Collins and R. A. Hankins, both of Carlinville, were selected as essayists for next meeting and the secretary was instructed to secure one more from outside county.

Dr. Orville H. Brown of St. Louis read a paper on "Some Advances in Our Knowledge of Metabolism" (relating especially to nephritis and certain fevers). As title suggests we received some advanced ideas from this paper. Paper was well delivered and thoroughly discussed. Dr. M. McMahon, Palmyra, then read an essay on "The Heart, Its Diseases and Their Treatment." The paper was conceded by all to be a very interesting and valuable contribution. Those present were Drs. O. H. Brown, St. Louis; J. S. Collins, Carlinville; W. B. Dalton, T. D. Doan and J. W. Berryman, Scottville; M. McMahon, Ben Hudson, Wm. L. Powell, E. W. Crum and I. H. Neece, Palmyra.

CHAS. D. KING, Secretary.

MADISON COUNTY

The first medical meeting in the history of New Douglas was held there on the afternoon of Oct. 3, and it was a rouser. It was the largest meeting in point of attendance and one of the very best in point of interest and enthusiasm that was ever held by our society. Doctors from all over the county came by automobiles and street cars, some driving 25 to 40 miles to be present. The day was an ideal autumn day which contributed much to the success of the meeting. The society was handsomely entertained by the two doctors in New Douglas, a good dinner being served to those who came by way of Staunton, and a tasty lunch to all after the close of the meeting. Dr. Elsworth Smith, of St. Louis, was at his best when he delivered his address on "Pneumonia," and held the undivided attention of his hearers for more than an hour, detailing the treatment of this disease down to the present day. He dwelt at length upon the serum and vaccine therapy but his conclusions were that they furnished a valuable aid but were by no means specific. The reading of the paper was followed by an earnest and animated discussion in which a large number of the members joined, making this one of the most valuable meetings this society has held for a long time. A vote of thanks was tendered the speaker and we know he will have a hearty welcome whenever he will consent to address us again. Upon favorable report by the board of censors, Dr. Uen Harrison, of Collinsville was elected to membership. Dr. George L. Sharp acted as temporary chairman until the arrival of Dr. E. A. Cook, our vice-president.

Those present were: Drs. Burroughs, Oliver, Tulley, J. W. Scott, Harrison, McKinney, Tibbets, Sharp, Schmidt, Fish, Kaeser, Wahl, Ferguson, Collins, Barnsback, Joesting, W. H. C. Smith, Hastings, Taphorn, H. E. Wharff, Robinson, Cook, H. W. Davis, Frank Worden, Schaff, Everett, and E. W. Fiegenbaum. Visitors: Dr. Elsworth Smith of St. Louis, Dr. Uen Harrison of Collinsville, Dr. I. O. Wilcox of Panama, Dr. W. L. Sharp of Slater, Mo., Dr. Robert Allen of Donnelson, Dr. E. A. Everett of Sorento and Dr. Van Meter of Staunton.

—*From the Madison County Doctor, November.*

McHENRY COUNTY.

REGULAR MEETING SEPT. 17, 1913.

The McHenry County Medical Society met at the city hall in Algonquin, Sept. 17, 1913, with Dr. H. D. Hull, president, in the chair. On account of bad weather and roads the attendance was not as good as usual. Members present were Drs. Nason, Phillinger, Hull, Pflueger, West, Smith and Francis.

Dr. H. V. Halbert of Chicago was present and read an interesting paper on "Treatment of Some Heart Diseases."

A committee appointed by the chair, consisting of Drs. Francis, West and Pillinger, drew up resolutions of sympathy on the death of Mrs. Windmueller, wife of Dr. E. Windmueller of Woodstock, one of our members.

ANNUAL MEETING OCT. 19, 1913.

The annual social meeting of the society was held at the Riverside Hotel in McHenry, Oct. 19, 1913. After a chicken dinner at which about twenty-five physicians and members of their families were seated, the meeting was called to order by the president, Dr. H. D. Hull. Present were Drs. Fegers, Hull, Guy, West, Seelye, Furlong, Foster, Stattler, Pflueger and Smith.

After the reading and approval of the minutes the secretary read two recent communications from the officers of the state society.

In regard to the matter of filing death certificates the secretary read the motion of the meeting of May 27, 1913, in which the undertakers were to be asked to fill out all of the blanks except the part relating to the cause of death (this to be filled out by the attending physician) and for the undertaker to forward the completed certificate to Springfield and collect the fee of 25 cents from the treasurer of McHenry county. The secretary announced that while the county clerk and treasurer of this county have endeavored to co-operate with us in this matter, they have finally decided that they are unable to do otherwise than to turn the fees over to the physician, as required by statute, and that we must amend our original motion accordingly. It was therefore

moved by the member who made the original motion, that we amend the same so that each doctor settle with the undertaker at the time he signs the certificate. Motion seconded and carried.

It was moved and carried that a copy of the proceedings of each meeting be sent to every physician in the county. To help meet the necessary expenses of the society an assessment of $1 per member was voted.

A lengthy discussion of fees was then held. It was the opinion of all present that we ought and must endeavor more than ever in the matter of country calls, to hold up to our regular understood mileage, at any and all distances; and that where in any community or neighborhood there seems to be a discrepancy between the charges made by doctors of different towns, this ought, for our mutual welfare, to be settled between these different men in the best manner possible. And also that proper mileage should be charged on obstetric cases in the country.

Moved and carried to adjourn.

A. B. SMITH, Secretary.

MORGAN COUNTY

The Morgan County Medical Society met Oct. 9, 1913, at Jacksonville. Before luncheon, at Passavant Hospital, Dr. Carl E. Black operated on a recurrent appendicitis case. Recurrent attacks of pain, accompanied by tenderness and soreness, were the principal symptoms, nausea and vomiting being absent.

The white blood corpuscle count was 10,000. The appendix was constricted in its distal portion and thickened; proximally, there was an abscess cavity, the valve of Gerlach being occluded. Recovery uneventful.

After luncheon at the Peacock Inn, Dr. A. J. Ogram, vice-president, introduced Dr. H. A. Haskell, of Lynnville, who presented "Ulcerative Colitis" in an excellent paper which preceded an unusually well worked up report of a case occurring in his practice. Drs. Thompson, Black, Stacy and Langston discussed Dr. Haskell's paper.

Drs. Adams (chairman), Norris, Stacy and Milligan were appointed a committee to cooperate with the Woman's Club in promoting a public health meeting Nov. 8, to introduce Dr. Frank Allport who will speak upon "Medical Inspection of Schools."

Dr. Black reported progress of one or two cases shown last month. A sarcoma of the thigh case is progressing toward a Caesarean section for a delivery. A second fracture of the thigh, splinted internally with steel ribbons, is progressing satisfactorily. Dr. Adams reported a case of tonsillectomy in the adult and in connection laid stress on tonsils, carious teeth, etc., as being foci of rheumatic infection. Also reported a case of aneurysmal tumor of the throat diagnosed by others as enlarged tonsil. The case was referred to the house surgeon for observation. An internal carotid aneurysm was no doubt the pathological lesion; the patient was sixty-seven and arteriosclerotic.

Physicians present were Drs. A. J. Ogram, H. A. Haskell, A. L. Adams, C. E. Black, H. C. Woltman, J. M. Elder, Franklin; P. C. Thompson, W. E. Langston, Bath; and

GEORGE STACY, M. D., Secretary.

ROCK ISLAND COUNTY.

The Rock Island County Medical Society met in regular session at Manufacturers' Hotel, Moline, Tuesday, October 21, 1913, meeting having been postponed one week from prescribed date to avoid conflict with the annual meeting of Second Iowa District Medical Society. President Snively occupied the chair and there were present 23 members and 3 visitors: Love, Beam, Leopold, Eddy, Dart, Williams, Peterson, Donahoo, West, Snively, Rinehart, Sargent, Souders, Chapman, Seids, Long, Wiggins, Sala, Craig, G. G., Norman, Otis, Arp, Littig; visitors: Decker, Miller, Hauberg. Minutes of August meeting read and approved. Applications of Drs. D. B. Freeman and G. D. Hauberg of Moline and of Dr. R. B. Miller of Rock Island were read and committees appointed. Seids, Leipold and Beam on the Freeman application; Williams, Sala and Souders on that of Miller, and Peterson, West and Sargent on that of Hauberg. Bills allowed, Crescent Printing Co., $1.50 and $2.00. The paper of Dr. Eddy on "The Use of Thyroid Extract in Cases of Nephritis," and Dr. Otis' paper on "Gastric Ulcer and the Bismuth Paste" were read and freely discussed. Dr. Darts' call from the meeting necessitated the laying over of his paper. The president, by request of absent Dr. First, placed for the society's consideration and recommendation a proposal involving the establishment of a medical supervision for the public schools of Rock Island, and upon motion appointed a committee, Drs. First, Sargent and Williams, to investigate the plans in use in other cities and to report at next meeting. Adjournment upon motion was taken until December.

W. D. CHAPMAN, Secretary.

TAZEWELL COUNTY.

The following resolutions were passed by the Tazewell County Medical Society at the annual meeting, in Pekin, Oct. 14, 1913:

Resolved, That medical products shall be acceptable for advertisement in the ILLINOIS MEDICAL JOURNAL only when their composition is stated and no exaggerated claims or misstatements are made in the literature.

Further, that the same rule should apply to external applications.

Further, that such biologic products as are produced under government license should be acceptable.

WM. NIERGARTH, President.

E. F. KELCHNER, Secretary.

WABASH COUNTY

The regular meeting of the Wabash County Medical Society was called to order by Vice-President

McIntosh at the Merchants Hotel, Mt. Carmel, Ill., Oct. 28, 1913. Minutes of last meeting accepted as read.

There were more than a score in attendance at the meeting and banquet, and in addition to the regular membership of the society, there were present as guests, Mayor C. A. Martin, Rev. Dr. S. M. Martin, the evangelist; Dr. B. E. Garrettson, of Wayne City; Dr. Andy Hall, Mount Vernon; Dr. Fred Brines, Lancaster, and Dr. Bert Smith, Allendale.

The banquet was served in the dining room of the Merchants Hotel.

The numbers on the program were interspersed with the courses of the banquet. Dr. John J. McIntosh, of Mt. Carmel, acted as toastmaster and introduced the speakers, as follows:

"Address of Welcome".....Mayor C. A. Martin
"Early Practice of Medicine in Wabash County"
..... Dr. McMurray
Table Talk—"The Social Life of Physicians"....
.....Opened by Dr. S. W. Schneck
Address—"Some Common Errors in Diagnosis"..
.....Dr. Andy, Hall, Mount Vernon, Ill.
Paper—"Suggestion in Medicine"...Dr. S. M. Martin

Dr. Martin, although of the ministry, is a graduate physician and has practiced not a little. His address was a very interesting one, and he cited numerous instances in which he had obtained precisely the same results as the Christian Scientists merely by using mental suggestion.

The election of officers for the ensuing year was the principal business transacted, the election resulting as follows: President, Dr. J. J. McIntosh; vice-president, Dr. Edwin Lescher; secretary, Dr. J. B. Maxwell; treasurer, Dr. W. B. Baird.

Drs. Edwin Lescher and S. W. Schneck were elected delegates to the next meeting of the State Medical Society which meets next spring.

The applications for membership of Drs. Brines of Lancaster, and Parmenter of Greensburg, were favorably acted upon and they were declared elected to membership in the society. The application of Dr. Bert Smith of Allendale, was received.

The meeting was one of the most successful the society has ever held and did much to arouse new interest in the work of the organization.

EDWIN R. LESCHER, Secretary.

YOUNG DOCTORS

Young doctors like to stretch a point,
  Perhaps the statement's strong;
But if in doubt just hear me out,
  Then say if I am wrong.

There's Dr. Drow, the embryo,
  A month he's been in line;
Asked by Mrs. Quiz how business is,
  He says—"why simply fine."

"I have a bunch of measles
  And eight of typhoid, too,
With ten of grip and six of dip,
  I have a lot to do."

"I am so rushed I scarce have time
  To make another call."
But if you please the FACTS are these
  He has no case at all.

When Mrs. Down called young Doc. Brown,
  He came with all his graces;
She said she'd heard he was a bird
  On handling O. B. cases.

"Experience vast has been mine in the past,
  For this sort of work I've a thirst";
He held his ground and breathed not a sound
  That really this case was his first.

Examining—then turning, so that of his learning
  They would have a profound realization;
He said with firm voice—"well may we rejoice
  For this is a head presentation."

"I say it meekly, with the head lying obliquely
  And the occiput pointing to front,
Things will come normal, the procedure formal
  This will be quite an easy stunt."

After waiting in vain, he examined again,
  Good gracious! what caused pandemonium?
His frame fairly shook, as on taking a look
  He saw his hand full of meconium.

Too sure at the start and a little too smart;
  This case a moral does teach;
Look ere you leap—a wise council keep;
  The head may perhaps be a breech.

A. G. BOSLER, Bacillus Poeticus.

From the Englewood Branch News Letter.

That Much Gained, Anyhow.

It is reported that Camembert cheese has gone down a cent since the new tariff law went into effect. Please do not get mixed on the spelling.—Ex.

Angelic.

Customer—"But is he a good bird? I mean, I mean, I hope he doesn't use dreadful language."

Dealer—"E's a saint lady; sings 'ymns beautiful. I 'ad some parrots wot used to swear something awful, but, if you'll believe me, this 'ere bird converted the lot."—*London Bystander.*

What's in a Name?

Printer: "This name—Fluteur—should be Tuteur, should it not?"

Editor: "Well, what's the difference? One could not be a Fluteur without being a good Tuteur."

Personals

Dr. and Mrs. William H. Mercer, Raymond, have sailed for Europe.

Drs. H. G. Schmidt, Elgin, and Frank Davenport, Rock Island, have returned from Mexico.

Dr. Otto L. Schmidt has been reappointed a trustee of the Illinois State Historical Library.

Dr. Clarence H. Wall, police ambulance surgeon, who was operated on for hernia, October 21, is convalescent.

Dr. George F. Tyson, Evanston, and Drs. Meyer Nuta and Robert Sonnenschein, Chicago, have returned from Europe.

Drs. Carl E. Black, Elmer L. Crouch and George H. Stacy have moved their offices to the Ayers Bank building, Jacksonville.

Dr. and Mrs. J. A. Pratt, of Aurora, have returned from a four months' trip abroad. The time was mostly spent in Vienna.

Dr. Solomon Eisenstaedt, Chicago, has been elected president of the Wendell Phillips Parents' and Teachers' Club for the year 1913-14.

Dr. Liston H. Montgomery has been appointed surgeon of the Eastern Division of the Chicago Great Western Railroad, to date from October 10.

Dr. J. Allen Patton, Newark, N. J., Rush Class of 1890, has been made Associate Medical Director of the Prudential Insurance Company.

Dr. Charles J. Whalen, Chicago, and Dr. Eugen Cohn, assistant superintendent of the Peoria State Hospital, were recently appointed First Lieutenants in the Medical Reserve Corps, U. S. Army.

Drs. L. B. Jolley, North Chicago, and V. J. Cokenour, Joliet, have learned not to advance the spark so far when cranking their autos. At least that is the usual verdict after fractures of the arm from that accident.

Dr. Frederick F. Brown, Rush Class of 1890, and for years associate professor of ophthalmology and otology, Rush Medical College, has discontinued practice and is taking a course in operatic music in Paris, where he expects to remain for at least three years.

Mr. Ernest P. Bicknell, director of the American Red Cross, announced that the work of the national body has become so heavy that it has been decided to divide the work into four divisions, of one of which Chicago is to be the headquarters.

News Notes

—The Chicago Roentgen Society was organized October 24. Dr. Hollis E. Potter was elected president and Dr. James T. Case, secretary.

—The advertising quacks are closing up their joints and leaving Chicago by every train if the stories in certain papers are to be taken seriously.

—Osteopaths cannot practice in Wisconsin without first obtaining a license, according to a ruling of the Supreme court in the case of one Herbert Schmidt, of Milwaukee.

—The new addition to the Prince Sanitarium, Springfield, will be occupied by Drs. Frank P. Norbury and Charles L. Patton. The first floor will be used for offices and the second floor and basement for sanitarium purposes.

—The JOURNAL invites signed correspondence from the members on matters that pertain to the material welfare of the profession or the JOURNAL. This gives the members a chance to express their views on any subject of interest to the medical profession.

—The Southern Illinois Medical Association held its thirty-eighth annual session at Duquoin November 6-7. President, Dr. Charles W. Lillie, East St. Louis; secretary, Dr. Alonzo B. Capel, Shawneetown. Mount Vernon was selected as the next place of meeting.

—Health Commissioner Young has asked an appropriation of $1,190,278 for the Department of Health for the coming year. The actual increase over the last appropriation is $450,000, of which $335,000 is for reorganization of the department and increase in the staff.

—The Chicago Department of Health recently prosecuted Dr. L. D. Rogers for running the National Emergency Hospital without a hospital license. The court imposed a fine of $100. Two of the fake medical museums have also closed their doors as the result of prosecution by the department.

—At the first meeting of the new Illinois State Board of Health held in Chicago, November 3, it was announced that the policies of the late board as regards prosecution of violators of the medical practice acts of Illinois and the enforcement of the laws of sanitation, will be continued by the new board. Dr. George W. Webster, Chicago, was continued as president of the board.

—The U. S. Bureau of Mines is to supervise the production of radium with the view of improving the process and avoiding the great waste of material in present methods. The work will be done in collaboration with capitalists who will establish free clinics for the use of radium in New York City and Baltimore.

—The civil-service examination for attending dispensary physicians in the dispensary department of the Chicago Municipal Tuberculosis Sanatorium, originally scheduled for Oct. 28, 1913, has been postponed to Nov. 24, 1913. The examination is open to all physicians residing in Chicago. Particulars may be obtained from the secretary of the Civil Service Commission, room 610, City Hall, Chicago.

—At the annual meeting of the Chicago Gynecological Society, October 17, the address of the evening was delivered by Mr. Leonard A. Busby, president of the Chicago City Railway Co., and the following officers were elected: President, Dr. Frank W. Lynch; vice-president, Dr. Henry F. Lewis; secretary, Dr. Robert T. Gillmore; treasurer, Dr. Charles B. Reed; editor, Dr. W. A. Newman, and pathologist, Dr. Arthur H. Curtis.

—We have received the following society publications: *The News-Letter* of Englewood Branch, The *Bulletin* of the North Shore Branch, The *Bulletin* of the Kane County Medical Association and *The Bulletin* of the Montgomery County Medical Society. The North Shore Branch publishes a sixteen-page pamphlet containing enough "ads" to pay all expense of publication and mailing and return a profit to the society.

—Rush alumni to the number of 275 held an enthusiastic banquet at the Hotel Sherman, Nov. 13. Dr. A. M. Corwin presided and submitted a proposition to raise an endowment fund of $30,000. The alumni present subscribed $3,500 and a plan was formulated for securing subscriptions from members of classes not present at the banquet. This fund is for alumni purposes, including endowments for scholarships and any other purposes that may appeal to the body of the alumni from time to time.

—The Kane County *Bulletin* contains the following touching farewell which smells of Dr. A. L. Mann's style: "Hail and Farewell! We have only two or three lines of space left, consequently cannot inflict upon you the voluminous Valedictory which we had planned, but must be content with turning the *Bulletin* over to a new Publishing Committee, with the certainty that they will improve on our efforts. They *couldn't* do worse."

Who would have thought that he was such a modest man?

—Compliance with the requirements of the Income Tax Law on the part of physicians offers many problems but it promises much light on the economics of the practice of medicine. How many physicians, especially those in general practice, know their net income or keep a separate account of their professional expenses as distinguished from their personal and family outlay? It means a much more elaborate system of accounting than most of us are accustomed to. In estimating the exemption of $3,000 only the expenses incidental to practice may be deducted from the gross income. How will you estimate the office rental, auto expense, etc., when your office is in your home and you take your family for an occasional "joy ride"?

—Gov. Dunne on October 28 appointed the following physicians members of the State Board of Health; Dr. John A. Robison, Chicago, vice Henry Richings, Rockford, term expired. Dr. T. B. Lewis of Hammond, vice P. H. Wessel, Moline, term expired. Dr. R. D. Luster of Granite City, vice R. E. Niedringhaus, Granite City, term expired. Dr. A. Szwajkart of Chicago, vice Charles J. Boswell, Mounds, term expired. Two members hold over. They are Dr. George W. Webster of Chicago, president, and Dr. Walter R. Schussler of Orland.

—At the special meeting of the Chicago Gynecological Society held in the Florentine Room of the Congress Hotel, November 15, at 8 p. m., papers were read by Dr. Lewis S. McMurtry, Louisville, on "The Foundation of Modern Gynecology and Abdominal Surgery"; by Prof. Dr. Kroenig, Freiburg, Germany, on "The Difference Between Former and Newer Treatments by X-Ray and Radium in Gynecological Diseases"; by Prof. Dr. Gauss, Freiburg, Germany, on "The Report of the Result of Radiotherapy in Gynecology"; by Dr. Thomas S. Cullen, Baltimore, on "The Umbilicus and Its Diseases," and by Dr. Robert L. Dickinson, Brooklyn, N. Y., on "Efficiency Engineering as Applied to Gynecological Surgery."

Public Health

YOU CAN HELP IN THIS FIGHT AGAINST CONSUMPTION.

Invest Your Charity in Red Cross Seals

There's no better time than the Christmas season to show that you appreciate the vital importance of this great fight against consumption.

Do your share—by beginning the Red Cross Seal habit today—and keep it up.

Do your share toward lightening the burden of those afflicted with consumption.

Put Red Cross Seals on your Holiday and Everyday Packages.

If you cannot buy Red Cross Seals in your town, write to Red Cross Seal Headquarters, Chicago Tuberculosis Institute, 10 S. La Salle Street, Chicago, for as many as you wish at 1c each.

—The U. S. Department of Agriculture has recently had called to its attention, by letters from people all over the country, serious misstatements as to the effects of foods recommended by self-styled "experts in dietetics."

In view of the widespread literature and advice of so-called "diet experts," it seems desirable to warn people against adopting the dietary recommendations of those without real scientific standing in the community. Some of the advocates of freak diets are sincere, but are themselves deluded; while others are fakers, who seek to make monetary gain by advising peculiar systems. In most of the recommendations of these self-established "experts," there is hardly a shadow of reason. They use isolated and often unrelated facts of science as evidence of the value of their peculiar system, but completely ignore statements in current scientific literature which would negative their contentions.

As an example they cite the fact that some one tried to raise rabbits wholly on cooked food, and found that they did not thrive on a diet purely artificial to such animals. From this the "pseudo" expert deduces that because rabbits could not live wholly on cooked food, human beings should confine themselves to raw food. As raw food is natural to rabbits, so man has proved cooked food wholesome by uncounted centuries of use.

Many so-called diet systems urge the use of raw foods. There is no objection to eating raw food if it is appetizing, agreeable and wholesome. But experience shows that the average man thrives best upon clean, wholesome, mixed foods, well prepared in the usual ways; some cooked, others raw. Of course, these articles should be of good quality, free from adulteration and dirt (visible and invisible).

In general, raw food is not as clean as cooked food for the cooking sterilizes and so renders innocuous pathogenic bacteria. Raw foods should be very carefully washed, but as a general rule simple washing will not remove all the bacteria, insect eggs, spores of fungi, etc., that may adhere to them.

In some of the literature circulated by the advocates of raw food, their correspondents are urged not to eat animal food because they say meat is filled with bacteria. This is not true. The surface of meat is not sterile, but the interior is, except in rare cases. We do not often eat raw meat, except when dried, smoked and so practically sterilized. The proper handling of such food is essential.

THE FALLACY OF THE ENZYMS AND PARTICULAR CHEMICAL SUBSTANCES.

Some raw food advocates base their argument on the hypothesis that raw food supplies the body with necessary enzyms; or, that a certain food, such as whole wheat bread, supplies lime or some other special substance. The body, however, normally supplies all the ferments (enzyms) it requires, and the average mixed diets of Americans give them all the raw food that they require. If the American people ate nothing but wheat, it might be necessary to advise them to eat whole wheat rather than fine wheat flour in order to get some of the substances excluded from the flour by bolting. Recent investigation indicates that there is a valuable substance in bran, which is lacking in the interior of the wheat kernel. This substance, called by some vitamin, is, however,

present in many other foods, and an ordinary mixed diet supplies all of such material that the body needs. Whole wheat bread is wholesome and palatable and affords an easy way of securing variety in diet, desirable as well as pleasing. But the average American who usually gets plenty of the food constituents he needs in his other articles of diet, need not feel compelled to eat whole wheat bread exclusively, simply to supply one peculiar element.

So-called polished rice has been objected to upon the basis of investigations made in oriental countries where rice forms one of the chief staples of a very limited diet, and practically the only starchy food. People who live mainly on rice might be expected to need certain elements that are in the part of the rice that is polished off. But Americans do not live on a diet limited to rice. There is, therefore, no logical reason why they should not eat polished rice if they prefer it. Both polished and unpolished rice is wholesome and valuable.

If the deductions of many food faddists accepted as facts were really operative, it would be difficult to explain how the human race had survived. It should have expired very soon after man had progressed enough in intelligence to begin to exercise any choice in his food and to cook it. But civilization has advanced from the time when man began to cook.

Many of the people who offer dietetic advice for sale recommended a diet to cure diseases without seeing the patient.

In many cases, people on beginning a radically new diet, whether of direct curative value or not, gain or think they gain a benefit. Marked change in diet or cooking will often produce the same effect, because change itself is often a benefit. In cases of serious digestive disturbances, sufferers should consult a physician of known ability and standing. To submit such cases for treatment by mail is as foolish as it would be for one having a complicated and highly specialized business trouble to ask another who had never seen his factory, and knew nothing about the business, to supply him with a positive remedy at long-distance.

Much of the advice on diet which has passed from individual to individual, and much of the supposed scientific advice now being sold for a price by some of the food advisers, is really little more than folk lore.

The main thing, as one grows older, is to eat in moderation and then, as always, to see that what you eat is clean and that the cooked food you eat is originally in good condition and that it is well cooked. If you eat raw vegetables and fruits and raw milk, take precautions to see that they are clean before they enter your system. If something really disagrees with you, and the fault lies actually with the article rather than with the method by which it has been kept or cooked, stop eating that kind of food. If you experience serious discomfort which persists, consult the best physician you can discover.

As a general proposition, be wary of people who offer to give you advice or to cure you without ever seeing you. Finally, bear in mind that each human body has individual characteristics, and that a diet which admirably suits one man who lives in a certain location and does a certain kind of work may not be adapted to another individual living in a different climate and doing a different kind of work.

No advice is better than the old "Moderation in all things."

Marriage

JOHN EDWARD DOLAN, M.D., to Miss Josephine Connell, both of Chicago, October 15.

HAROLD M. CAMP, M.D., Monmouth, Ill., to Miss Rose Laura Fox, Chicago, October 16.

CHARLES O. BURGESS, M.D., Monmouth, Ill., to Miss Lura Harlin of South Bend, Ind., recently.

OSCAR CLEFF, M.D., Chicago, to Miss Zolier Jacqueline Parsons of Mansfield, La., November 5.

FREDERICK MORRIS FRANKFORT MEIXNER, Peoria, Ill., to Miss Lillian Payne of Chicago, October 18.

ISADORE MICHAEL TRACE, M.D., to Miss Miriam G. Haekner, both of Chicago, October 14.

GILBERT H. WYNEKOOP, M.D., to Miss Lucile Megahan, both of Chicago, November 20.

Deaths

WILLIAM G. TODD, M.D. Rush Medical College, 1844; of Chicago; died at the home of his daughter in that city, August 7, aged 91.

ALBA G. BLANCHARD, M.D., Eclectic Medical Institute, Cincinnati, 1882; a member of the Illinois State Medical Society; died at his home in Creston, October 28, from diabetes, aged 65.

ARMATUS S. HOLLAND, M.D., Chicago Homeopthic Medical College, 1896; for many years a practitioner of Chicago; died at his home November 2, from cerebral hemorrhage, aged 71.

FREDERICK EUGENE WADHAMS, M.D. Rush Medical College, 1878; a member of the Illinois State Medical Society, and for 56 years a resident of Chicago; for several years local surgeon for the Chicago & Northwestern Railroad; died at his home in Chicago, November 1, aged 60.

EDMUND T. ALLEN, M.D., Cleveland University of Medicine and Surgery, 1881; Hahnemann Medical College, Philadelphia, 1886; a Fellow of the American Medical Association; once secretary of the Nebraska State Board of Health; died suddently at his home in Chicago, August 17, aged 57.

EDWARD H. HIGBEE, M.D., Missouri Medical College, St. Louis, 1884; a member of the Illinois Medical Society; one of the founders of the Polyclinic Hospital, St. Louis; surgeon for the Chicago & Alton Railroad at Roodhouse, Ill., and alderman for several years; died at his home, November 3, from pneumonia, aged 66.

ARIA LOUIS DERDIGER, M.D. College of Physicians and Surgeons, Chicago, 1903; a Fellow of the American Medical Association; assistant in bacteriology in his alma mater; professor of psychiatry and ophthalmology in the Chicago College of Medicine and Surgery; president of the Chicago Eye, Ear, Nose and Throat Infirmary; died at his home in Chicago, November 12, aged 47.

HIRAM M. MARTIN, M.D., University of Michigan, Ann Arbor, 1879; a member of the Illinois State Medical Society; president and professor of diseases of the eye and ear in the Chicago Ophthalmic College; president and professor of diseases of the eye and ear and clinical ophthalmology and otology in Jenner Medical College, Chicago; died in the Passavant Hospital, Chicago, September 29, aged 54.

HERMAN D. PETERSON, M.D., Chicago Medical College, 1892; a Fellow of the American Medical Association; a member of the Physicians' Club of Chicago and Mississippi Valley Medical Association; anesthetist to St. Luke's Hospital, Chicago, and attending gynecologist to St. Luke's Hospital Free Dispensary; lecturer on anesthetics in Northwestern University Dental School; died October 18, while being taken to St. Luke's Hospital, from pneumonia, aged 43.

WILLIAM HERBERT DENSLOW LEWIS, M.D., University of Michigan, 1878; born in New York, April 2, 1856, was educated in America and abroad and was licensed in Illinois in 1878; for many years a member of the American Medical Association and in 1906 chairman of the Section on Hygiene and Sanitary Science. He served as president of the attending staff at the Cook County Hospital, and was a member of many societies and state boards for the study of various phases of sanitary science; died in Chicago, October 5, 1913, aged 57 years.

Book Notices

THE TREATMENT OF RHEUMATIC INFECTIONS. From the press of Parke, Davis & Co.

This little volume of 134 pages is out in the interest of Phylacogens. The first page gives the views of Dr. A. F. Schafer and the theory upon which he worked in perfecting the bacterial derivative.

The subject of rheumatism is discussed at length in its various phases. The cause, the prognosis, the treatment, are all given attention. The technique of administration is described in detail, together with the reactions which may be expected, and also the contraindications for its use.

Over half of the volume is given over to case histories and extracts of articles written by various clinicians scattered throughout this country. Perhaps wild statements have been made by enthusiasts of every biological product that has thus far been produced; in fact, many such products of value have suffered from such enthusiasm, notably "Koch's Tuberculin," but one cannot read these extracts and case histories—noting the names of the men who are responsible for them—and say that these men have all been carried away by their enthusiasm.

One wishing to use Phylacogen will derive much information from this booklet.

THE PRACTICAL MEDICINE SERIES. VOLUME VII, "OBSTETRICS," edited by Joseph B. De Lee, A. M., M. D., Professor of Obstetrics, Northwestern University Medical School, with the collaboration of Herbert M. Stowe, M. D. Series 1913. Chicago. The Year Book Publishers, 327 S. La Salle Street.

This little volume seems to cover everything that is new in the field of obstetrics and reviews much that is not altogether new. The newer drugs used in obstetric practice are discussed, and the pages on